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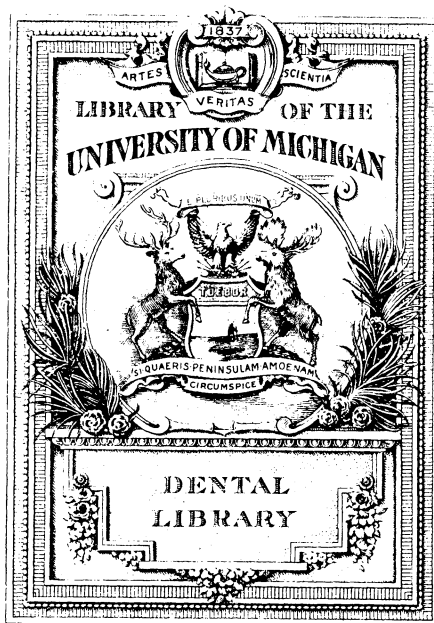
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**The best antiseptic for
a dentist's prescription**

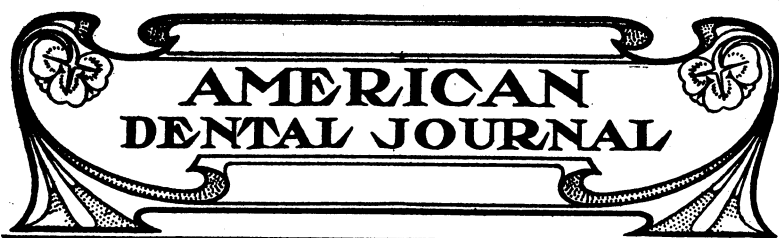
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A fourth of a century of continued, satisfactory employment of Listerine has demonstrated to many practitioners that Listerine is the best antiseptic to prescribe for daily use by the patient in the care and preservation of the teeth. The mild, stimulating effect of the free boric acid radical in Listerine is of the highest importance in maintaining a healthy equilibrium of the fluids of the oral cavity. At best, alkalies simply temporarily neutralize the acid-forming ferments which the carbohydrates of food produce in the mouth,—a true antiseptic prevents that fermentative change.

Literature will be forwarded upon request, containing a brief résumé of recent bacteriological investigations supporting the above argument.

Lambert Pharmacal Co.

St. Louis, U. S. A.



AMERICAN DENTAL JOURNAL

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PROGRESSIVE COURSE OF PRACTICAL INSTRUCTION

ORTHODONTIA.

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ILLINOIS.

CHAPTER XX.

FACIAL DEFORMITIES.

Wherever we may travel in different cities or in different countries we can always find irregular teeth and imperfect features. The tongue may be silent, but the mouth never ceases to speak. It has fallen to the lot of modern dentistry to prevent or improve the majority of facial deformities that appear today, for associated with many forms of malocclusion we find more or less change in the outlines of the features. These changes may involve only the position



Fig. 1.

of the lip, or they may involve both of the lips, cheeks, nose and chin. These conditions established by malocclusion of the teeth may also be improved or restored to the normal if the condition and position of the teeth is favorable, in some cases, and in other cases, if the age is favorable. In case the harmony of the profile is broken by a protruding or receding chin, at about the age of 18 years or later,

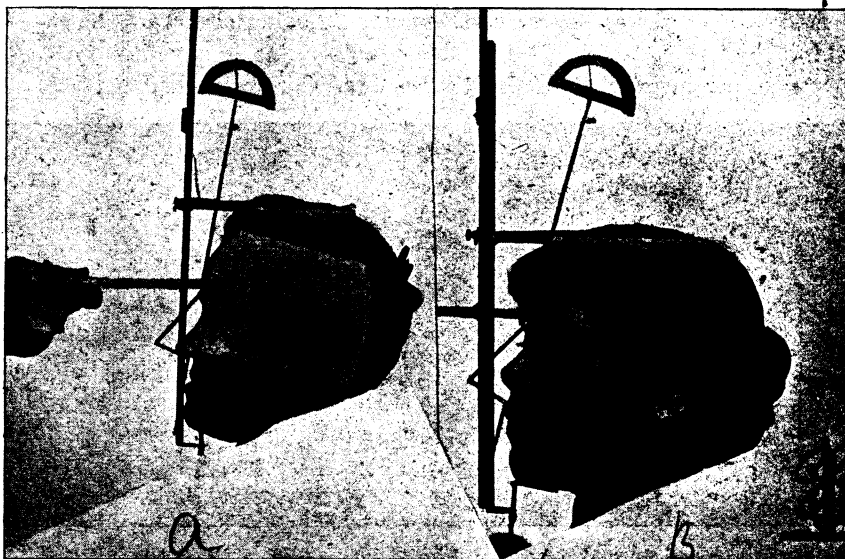


Fig. 2.

it would be impossible to restore to normal by the movement of the lower maxilla, but it would be possible to greatly improve the appearance by movement of the teeth alone. The changeable area being controlled by the condition of malocclusion, all variations from normal occlusion change the position of the lips, cheeks and chin proportionately, and to that consideration the author gives a classification embracing the marked facial deformities.

Two standards are necessary in the consideration of facial deformity, first, normal occlusion (Fig. 1); second, the ideal facial outline (Fig. 2).

The normal facial outline consists of that type where there is no noticeable variation of the conformity of the facial outline. That is, as considered from the standpoint of orthodontia, that there is no variation as the result of malocclusion. It is the variation from this



A.

Fig. 3.

B.



A.



B.

Fig. 4.

angle line of the lips or chin as the result of malocclusion. To make deductions from the side of the nose is not a correct method, as that is not the greatest peripheral point of the profile nor the center nor median line of the face. The degree of the normal facial angle line is about 82, and this angle line should touch at a point just above and between the eyebrows on the forehead passing downward, touching the lips and chin. To be able to apply this in practical work, the author invented the facial clinometer. This instrument not only



A.

Fig. 5.

B.

shows where there is a lack of development or where there is an undue prominence of certain parts of the features, but also gives the number of degrees of the facial angle, which indicates whether a chin is protruding or is in normal position, by the number of degrees. A, Fig. 3, shows it in position on a case of mesial occlusion, the instrument touching the forehead, lower lip and chin, the upper lip being about one-fourth of an inch from the angle arm of the instrument. B, Fig. 3, shows instrument in position on a case of distal occlusion. In this case of distal occlusion. the instrument touches only the forehead and upper lip. When the touching points of the normal facial outline are broken, that is, when there is protrusion or retrusion in position of the lip, lips or chin as the result of malocclusion or position of the lower jaw, the case will then, according to the malocclusion be placed in its proper class.

Considering the profile as outlined in A, Fig. 4, at first glance one would be led to believe that there was protrusion of the lower

jaw. By careful examination of the profile, one can see that there is not only a lack of prominence of the upper lip, but the upper part



A.

Fig. 6.

B.



Fig. 7.

of the face is also undeveloped. By examination of the occlusion of the teeth, Fig. 5, we find that the distal teeth are in normal occlusion, but the upper anterior teeth are in lingual occlusion. This undeveloped condition of the anterior part of the maxillary bone and alveolar

process causes both lingual occlusion of the upper anterior teeth and the flattened appearance of the upper lip. By enlarging the upper arch, making room, moving the upper anterior teeth out over the lower, making room for the cuspids to come down, the occlusion is not only restored to normal, but the facial appearance as well. B, Fig. 4, shows the change in the features after treatment.

Fig. 6 is the photograph of a case where there is a lack of development about the mouth, the lips being drawn backward. A, Fig. 7, represents the models of this case, showing that there is a lack



A.



B.

Fig. 8.

of alveolar development. The teeth are so crowded that both cuspids stand almost out beyond the centrals, the anterior teeth are so badly crowded and overlapping that both the upper centrals stand back even with the cuspids. By enlarging both arches, moving the teeth forward to normal occlusion, the facial appearance is restored to normal (B, Fig. 6). The treatment of the malocclusion in this case is limited to the anterior teeth.

A, Fig. 8, shows a case that is rare. Such a distorted condition of the facial outline is due to supernumerary teeth. In this case there were two supernumerary teeth between the central incisors (Fig. 9), excessively enlarging the upper arch and bulging out the upper lip. Here we have occlusion of the distal teeth normal and

malocclusion of the upper anterior teeth due to supernumerary teeth. By extracting the supernumerary teeth, drawing the centrals together and backward to normal occlusion, the facial appearance is



Fig. 9.



Fig. 10.

restored. This patient was 7 years of age. If this condition had been allowed to continue for three or four years longer, this undue prominence of the upper lip would become permanent in its abnormal position. B, Fig. 8, shows the change in the facial appearance.

(To be continued.)

PROSTHETIC DENTISTRY.

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CHAPTER XLI.

Following up with the idea of conserving the lingual cavity and giving natural as well as comfortable surroundings for the tongue, the Brewster crown and method of replacing lost teeth, is deserving of consideration. By his method the palatal surface of an anterior bridge possesses the natural form of the teeth instead of the smooth shapeless form, as when mere facings are used. The Brewster tooth has a contour approximating nature and by the method he advocates the porcelain is not only evidenced labially and buccally, but palatally as well, and this should recommend it to our faithful consideration. Further, the Brewster crown has the additional merit of being a strong tooth, because of the very small opening which exists in the porcelain; this allows the porcelain to be abundant, and this latter merit places the Brewster crown in this one particular superior to crowns having large openings. Porcelain is strong when in mass or globular form and the Brewster crown, I believe, has great strength because of its bulk of porcelain. The Brewster Dental Company sets forth the following as special advantages:

"1. Because bridges with Brewster's teeth, when properly made, are much stronger and less costly to make.

"2. They are as artistic as an all porcelain bridge, very much less expensive to construct, and yet have the all porcelain effect which is so much appreciated by patients.

"3. A bridge with these teeth need never be taken out of the mouth for repair."

The Brewster tooth is used with splendid success by those who fully comprehend its special adaptabilities, and to those who seek strength of porcelain with ease of affixation it has an important place in dentistry.

In the construction of a bridge the case being as shown in the engraving (Fig. 1) the process would begin by cutting off the cuspid and molar. Accurately fit caps and narrow bands to the roots. This

portion of the work is familiar to every dentist and need not be described here in detail. There is one feature, however, that should be observed when preparing roots as abutments for bridges with Brewster's teeth. The canals should be enlarged with a round bur, size No. 15, on the Brown & Sharpe gauge, or .057 inch. This bur

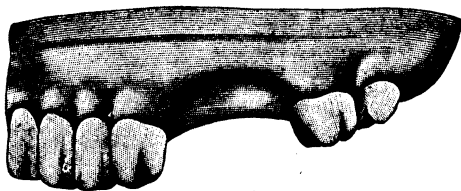


Fig. 1.

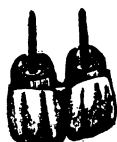


Fig. 3



Fig. 5



Fig. 4

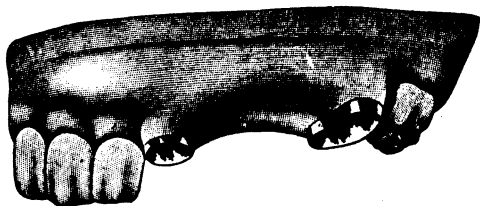


Fig. 2.

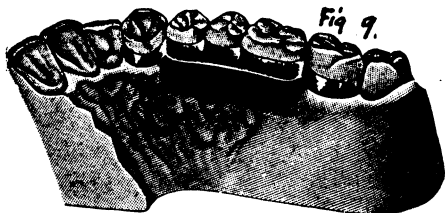


Fig. 9.



Fig. 6

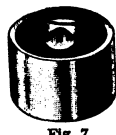


Fig. 7

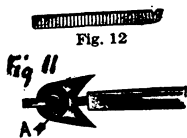


Fig. 11

Fig. 12



Fig. 14

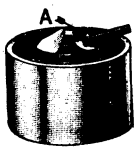


Fig. 13

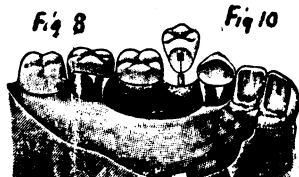


Fig. 8

Fig. 10

will make a hole into which the rectangular post will fit snugly and have a bearing along its full length, while at the same time allowing plenty of room for the cement (or gutta percha, if such is used), to come up on either side and fill the canal. (Gutta percha is not recommended for mounting these bridges on account of its want of rigidity.)

Fig. 2 shows the abutment roots capped ready for the teeth, the canals having been enlarged, as described above.

Now select the teeth: The absorption shown on model Fig. 1 is not excessive and a bridge may be made with the teeth just resting on the gum, or in the case of a lower bridge, a clear space may be left under the dummy teeth. Whichever form is preferred the detail of procedure is practically the same, the only difference being in the length of the teeth. From the selected teeth take the cuspid and, if necessary, grind the cervical end to fit the band. Cut a suitable size piece of metal for backing, anneal well, conform it to lingual surface of tooth with the fingers and trim off corners and surplus, but leave enough metal so that when finished swaging, the tooth will be backed as shown in Fig. 5. Observe that in all cases the backing goes well up on the approximal surface of all the teeth. This is necessary both for the strength and cleanliness of the bridge.

The backing may be either 24-karat gold, 28 gauge; 22-karat gold, 30 or 32-gauge; or soft platina, 40-gauge. The latter is, perhaps to be preferred, as it is rigid when swaged and can not be burned through in the soldering process.

Fill the steel cup, Fig. 6, with sealing wax, modeling composition, or other similar material, and soften its surface with Bunsen or blowpipe flame, and while soft insert cuspid, as shown in Fig. 7; now lay the backing upon it. Place cylinder over the cup; insert plunger with its unvulcanized rubber end and strike a few good blows with a two or three-pound hammer, or the swaging may be done in swaging press.

After pressing the metal into the recess in tooth remove the backing, and with a stone in dental engine grind off the raised portion from inside the backing; see that no bur remains on that side of the backing which comes next the tooth.

Now bevel the iridio-platina bar and file small notch at one end, like Fig. 12, and try it into the tooth to see that it passes freely in and out. If it does not, file off any burs which prevent its doing so. Place backing on tooth and push the bar through it into the tooth as far as it will go; tack the two together with hard wax at A, Fig. 13. Remove backing from tooth and paint inside with a little whiting to prevent any solder running through the hole. Now with the special soldering pliers (locking tweezers) hold bar

as shown in Fig. 14 and solder the backing and bar together at A, with a very small quantity of 22-karat solder.

Return backing to tooth, and see that it goes to place, then cut bar off at A, Fig. 13. As the iridio-platina is very hard, it had better be notched on both sides with thin wheel before using cutting pliers.

Return tooth and backing to the cup and give one or two light blows, or use a burnisher around the margins to insure perfect adaptation at those points.

The backing should now be removed from the tooth, dropped onto a little investing material and contoured with 22-karat solder. It is then only necessary in the final soldering of the bridge to run 18-karat solder in between the teeth, thus removing the possibility of warpage, liable under the shrinkage of a large mass of solder. When the bite is close a piece of the iridio-platina bar, the size used for the anterior teeth, may with advantage be soldered along the backings up to the abutments. This gives more rigidity in such cases than can be obtained with solder alone.

The backing should now be scored on the inside with a sharp instrument, to give a better hold for cement, and when again placed on the tooth should fit tightly in every part.

The molar abutment tooth and the three dummy teeth should now be backed in the way already described, waxed on the model and the correct articulation obtained.

When this is done the five teeth should be carefully removed from their backings (it is sometimes necessary to use sticky wax to assist in their removal), and the case invested. When the investment has set, the plaster model should be cut away, and the case soldered.

For those wishing to save the time of soldering of a post into the backing, the Brewster Company are supplying 24-karat gold backings with the post soldered in; so that it is only necessary to pass the post into the tooth and burnish the backing to place, which is simple and requires little time.

Before cementing on the teeth submit the case to the acid bath to remove borax and stains, and partly finish; the final finishing should be done after the teeth are cemented in place and the cement has thoroughly crystallized.

A saddle bridge can be well made as illustrated in Fig. 15, showing palatal view.

The Brewster Separate Dowel crown has a merit in individual crown applications because of its rigid post, and once a crown is properly set the forces of mastication will not divert the crown from the position originally given.

The Brewster crown is of such component parts that its glazed surface can be changed by grinding and reglazed or made to glisten by polishing with varying discs.

It has been my experience to apply the Brewster crown in many cases, and for small, short laterals and lower incisors, it is especially indicated because of its strength and smallness of post, allowing root structure to remain for strength.

The post can be readily enlarged so as to fit either large or enlarged root canals. My method is simple and can not fail to prove successful. Take the post, insert it into the crown, mark the depth of the crown opening on the post, then take post from porcelain and with wide-nosed pliers grasp the post at the crown end and immerse it into Melatt's, Watt's or Weston metal, chill the metal and if you desire the post still larger repeat the immersion until sufficient circumference is gotten; then with file you can quickly taper the post to any desired form. This will give you a post with all possible surface for cement anchorage. I have found this practice a wonderful aid in giving the crown definite location. If the dipping method were understood I am satisfied that practitioners following it would be eager to pronounce it excellent. If you have made the post too large with the dipping, you can with hot spatula give it any shape, and quickly remove the excess. But care in the initial dippings will give you exactly what you desire.

(To be continued.)

DENTAL PATHOLOGY.

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 MEDICAL COLLEGE.

We have previously spoken of the nutritive function in all living protoplasmia as one of the things influencing both disease and its treatment. It should be remembered that the manifestation of disease as it appears in all forms of life, whether it be in the higher or lower form or whether it be in the animal or vegetable kingdom, is the result of the reaction taking place in living protoplasmia to protect itself from any disturbing influences that may come into the tissues and organs of the body. It should further be remembered that the process to an extent depends upon the tissues of the body and their power of protection, as well as upon the virulency of parasitic life. It sometimes happens that the virulency of the causation of disease must depend, as has been stated, upon the nutritive function of the low forms of life. The resistance of the tissues in the higher forms of life is subjected to all the influences that go to make up the life process of the cells, tissues and various organs of the body. It is necessary to reckon upon the function of the latter in order that the proper treatment can be applied to assist the tissues and cells to relieve themselves of foreign substance.

All tissue changes that take place in the manifestations of disease is the reactivity of living substance against a foreign foe. So it will be seen that disease is the manifestation of certain disturbed biological phenomena, which is based upon certain metabolic disturbances of the part in which the cells and tissues no longer perform their function in a normal way. So this we call *pathology*. Thus it will be seen that the term pathology must be subdivided into two larger classes. One is the structural changes, in which it will be observed that the cells and tissues no longer maintain their normal appearance. This is called morbid anatomy, or better, perhaps, morbid histology. The other class is where the function of the part is changed from a normal to an abnormal activity and may be spoken

of as morbid physiology. The first division may be subdivided again into general pathology, which refers to the abnormal processes common to the entire organism. The lateral division of this subdivision is called special pathology, which includes certain structural and functional changes taking place within certain special organs.

Another well-recognized phase of pathology is a condition which has for its consideration the causation of disease (etiology). This phase of the subject is divided into predisposing and exciting causes. The predisposing causes are those influences that in any way may lower the physiological activity of an individual in such a way as to be instrumental in bringing about the conditions of the body where it can be affected by various forms of parasitic life. The predisposing factors may be produced by the following influences: bad hygienic surroundings, poor food, bad air, noxious gases, fatigue, extreme temperature, pre-existing diseases, drugs and injuries. The above-named influences are looked upon as some of the main influences in this direction. The exciting causes may be produced by mechanical forces, electricity, poison, parasites, as well as mechanical abnormality; as, for instance, valvular heart lesion.

It may be observed that if some of the factors that enter into the causation of predisposition to disease be severe and long enough, it may be possible for them to become the exciting cause of disease. On the other hand, it may be possible for a person to be affected with two diseases, one acting almost entirely independent of the other; as for instance, the lung tissue may be infected with tubercular bacilli and the person contract pneumonia, or he may suffer from chronic nephritis or intestinal disturbances.

If one were to stop and look around for the most common onset of disease it would be observed that traumatism comes in for a very large and very important field of consideration. Trauma may disturb the function according to the severity, rapidity and duration of its action. For instance, if constant pressure is applied to a part it will cause disturbed functional activity and produce through the lack of blood supply to the part atrophy of the tissue, or some other marked structural or functional changes. If pressure be applied to the tissue in an intermittent form, hyperæmia of the part may take place and result in hypertrophy, which is the opposite of atrophy. These terms will again be referred to under a more appropriate heading.

Under the head of traumatic disturbances, if a sudden force comes against the tissue there may be a disturbance such as to produce the destruction of the continuity of the part, which will be in accordance with the instrument inflicting the wound. If the force is produced by a sharp instrument, laceration would be the result. If the force is in the form of a dull instrument it will produce contusions. In some localities of the body it may result in both a fracture and concussion. In some cases there is a possibility of establishing a phenomena of inflammation.

Under the head of temperature we can have the action of extreme heat and result in what is usually understood as burns. The changes produced under this head is the relaxation of blood vessels, followed by exudation of serum and in some instances followed by blood. The extent and severity of the injury must necessarily depend upon the time of action, as well as the degrees of heat applied. The manifestations of these effects may be classed in pathological terms as hyperæmia of the exposed part, exudation of serum, followed by liquefaction forming vesicles (blisters). If the extent of the injury is somewhat severe the cellular protoplasmia will become coagulated, resulting in the death of the tissue (necrosis). If the heat is severe enough and continued for long enough time there will be a charring of the part. In such cases the tissues may become deeply involved. In cases of burns death may take place immediately, caused by shock, or possibly death may occur from simple exhaustion. If a burn should involve one-third of the surface of the body and the degree of the burn is anything like severe it will invariably prove fatal. If the heat is applied to the body in general its results will be according to the severity, whether the burn was produced by the sun, dry air or steam. If the heat is applied in the form of the sun's rays or dry heat the pathological changes will manifest themselves in the form of heat strokes, also called heat exhaustion. When any of these symptoms are produced there will be heart failure, dyspnea and coma; pulse is full, high temperature, dry skin, difficult breathing, flushed face, followed by unconsciousness and muscular relaxation.

In the case of severe cold being brought in contact with the tissues of the body the symptoms as above described will often be present, according to the severity of the cold. The superficial or deep tissues may become involved with contraction of blood vessels, and a

large majority of structural and functional changes, as spoken of above, will manifest themselves in the parts, however, in the superficial the blood vessels may become dilated and paralysis of the walls of the blood vessels may occur, thus increasing the blood in the part, but if the tissues should freeze during the contracted stage of the blood vessels the part will appear quite bleached out.

Electricity may cause pathological changes and destruction of tissue either by heat or by the resistance of the tissue to the passage of the electric current. In the application of the X-ray to the tissue it may produce only a disturbed function in the superficial tissue; if on the skin a form of dermatitis, or if it is a deep burn it will produce the changes as above described. Barometric pressure may cause certain functional disturbances, as in the case of deep sea divers or in mountain climbers, or persons making a balloon ascension. In the latter case, however, the specific gravity of the blood may be increased with increased red blood corpuscles and hemoglobin.

Certain seasons may have an interesting influence on the causation of disease, as is usually shown by pneumonia and nephritis being more common in winter; malaria and typhoid fever are more prevalent in the spring of the year, while enteric disorders and yellow fever more commonly manifest their processes in summer.

INTOXICATION.—The term intoxication is applied as meaning a poison, meaning that when a chemical substance of a definite chemical characteristic is capable of exerting certain functional or structural changes of an organism when administered in small quantities. It may be possible under certain circumstances for a substance of this nature to be formed within the body under the influences of certain metabolic changes, and if permitted to remain or accumulate in the tissues or cells of the body, their action there will be manifested by certain structural and functional changes. If the physiological mechanism of the tissues, cells or organs of the body may be of such a nature as to prevent the destruction or elimination of such toxic products, their presence there disturbing certain metabolic changes result in various pathological disturbances of the part (thus the term auto-intoxication). Some have substituted the word autointoxication with autochthonous. Victor C. Vaughn has used the term, in this connection, autogenous, meaning the disease that originates within the body. However, any of these terms is sufficient to designate the pos-

sibilities of certain metabolical products remaining in the body which may result in the form of a poison. Under this head comes faulty elimination, excessive glandular secretions, irregular absorption of certain digestive products, incomplete chemical transformation of nucleins, leukomains, which are compounds of a chemical basic substance, resembling very closely vegetable alkaloids produced by certain metabolical activities of the organism. It is barely possible that some of these compounds are formed in certain bacterial activities. According to some observers it is believed that leukomains are the result of certain chemical changes taking place in certain cellular nucleins, some coming from keratin and from the muscular tissue.

The nucleinic leukomains are quite numerous, but the one that has proved of the greatest interest to toxicologists is adenin ($C_5 H_5 N_5$), followed by the various members of this group in the manner herein set forth, each important as placed here: Hypoxanthin ($C_5 H_4 N_4 O$), xanthin ($C_5 H_4 N_4 O_2$), guanin ($C_5 H_5 N_5 O$), heteroxanthin ($C_5 H_6 N_4 O_2$), and paraxanthin ($C_7 H_8 N_4 O_2$). All of these chemical compounds are closely related in their chemical nature to that of uric acid, and they are frequently alluded to as xanthin, alloxin or purin bases. Some authors allude to them as alloxuric bases. In nuclein derivatives the chemical formula contains some of the cyanogen group, the relations of which are by no means well understood. The leukomains are crystalline or amorphous characteristics, sparingly soluble in water and quite insoluble in ether. The watery solution, however, is practically neutral in reaction. Their combining power with acids and alkalies is quite feeble. It is by no means a safe speculation to say as to just what relations leukomains bear to the causation of disease. Some are very much inclined to lay considerable stress on them as important factors in certain uric acid diatheses.

(To be continued.)

OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.,

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DENTAL SURGERY.

SHOP TALK, No. 12.

WEDGING AND SEPARATING TEETH.

Wedging and separating is divided in a general way into quick and slow methods. The extent to which quick separation may be done is limited; while slow wedging may go to almost any limit desired, if deliberate time is taken, as is done sometimes in orthodontia.

Many devices have been designed for the work of separating and out of the number an operator finds one device is good in one place and another in another place. Some are called universal, but requiring two or three sizes to make them so. Some need a separate wrench or instrument to operate them; some have the operating device attached. Of course, these separators are for immediate separating.

The primitive way, and often the best way, is to resort to the wooden wedge, orange wood being found well adapted and bundles of small round sticks are supplied by dental depots for the purpose; but in later years the very profuse supply of wooden toothpicks of both hard and soft wood puts into the hands of every dentist some ready-made and very handy wedges. The anterior teeth, especially, are very easily separated, oftentimes, with most any of the wooden toothpicks, soft wood sometimes being desirable. The *modus operandi* it is hardly necessary to state, the splinter simply being pushed gently, but firmly, with fingers, the protruding end being cut off with suitable cutting pliers, or soft wood may be cut readily with the little curved scissors operators are generally supplied with. Often the protruding wedge serves a purpose in holding the lip away and especially operations on lower front teeth.

It is often necessary to drive wedges with a mallet. It should then be of hard wood and perhaps there is nothing better than a piece of orange wood whittled to shape desired.

Controversies in the profession have arisen from time to time as to whether quick or slow methods of separating are preferable. From

the workman's point of view—the desire to get at the work to be done and get through without loss of time—the immediate wedging is the preferable method, and in many instances the circumstances are such that slow separation is out of the question.

Most patients will stand the pain of crowding the teeth apart without much complaint, and the pain usually subsides in a few moments; but there seems to be some people with excessive sensitivity in that particular thing of forcing apart the teeth. There are some, too, who never submit to any slight wedging even, without suffering subsequently through an inflamed condition produced in the peridental membrane; and nearly all operators have found patients who can not stand immediate wedging without very severe pain, and a disturbance following that may need special treatment along the line of counter irritation.

The shape of teeth and the position in relation to the adjoining tooth make wedging or separating difficult by use of most of the devices without impinging too much on the gum tissue, unless one uses some means of preventing the device from crowding up (or down) as the wedged points are forced between teeth, the triangular interproximal space causing the deflection.

In many cases the wedge or separator points must be carried so high or so low to be out of the way of the cavity and necessary excavations, that there is no other way than impinging sometimes severely on the gum tissue, and it is this injury to the gum that is painful with some more than pressing the teeth apart.

There is, however, one set of separators so made and applied that the points neither go between the teeth enough to impinge upon the cavity and be in the way of operations, nor crowd upon the gums, but if properly managed require more time and trouble to adjust than some of the other devices. All of these devices are more or less in the way of finishing with discs and strips, and a number are very much in the way of excavating and plugging.

While it would be quite impossible to get along without some means of immediate separation, it is usually more satisfactory to take all the time necessary for slow wedging and get all the space required.

Pursuing this method it is usually necessary to draw something or pack something between the teeth that will exert a gentle but continuous pressure to bring the end desired. This may have to be

renewed in some instances once or twice, necessitating the return of the patient, but if done slowly enough and with the proper material, no pain to speak of is endured. When first the insertion is made, the sense of pressure makes one uneasy for a time in about the same degree that any foreign substance does lodged between the teeth. One has the desire to dislodge it; but will forget it in a short time if it has been carefully done.

Wax tape of different thickness and widths is provided for this work by supply depots, and their capacity may be doubled frequently by doubling the tape. If, for instance, tape is drawn between two teeth today single, by tomorrow it has done all it will do, and then the thickness may be doubled if more space is required.

Where a cavity (or cavities) between two teeth has an orifice convenient, absorbent cotton may be packed in as hard as can be done. The saliva moistens and swells the cotton and gentle steady pressure, and a strong pressure, is the result. Cotton so wedged between two teeth rarely creates any soreness or uneasiness, but to gain the space sometimes required, may require several renewals.

Ordinary cotton twine may sometimes be found useful to draw between teeth, and when wet will swell with plenty of slow steady pressure.

Gutta-percha forced with good pressure into cavities between teeth and worn for some days will usually cause some separation, especially if subject to force of mastication.

Where separation causes tenderness the tooth may be difficult to operate on the next day; but usually the second day soreness has disappeared. That is one trouble with slow wedging, that one must wait for action, and at times for the soreness to subside. That is consistent in some practices where it is easy to get the return of the patient, but not in others, as a rule; but it should ever be borne in mind that many a filling is a failure; because space enough has not been provided to do good work; and immediate wedging is often at fault in that respect—not enough space can thus consistently be gained.

As a rule, however, we can get enough space to be able to contour our fillings approximately so that when finished they will come back to the normal contact and leave no gap for food to be forced in, which would be the case if crowding apart was not sufficient.

It should always be borne in mind that serious injury has developed now and then from an *overdose* of wedging. Teeth have been ruined, having sustained injuries from which they never fully recover, and caries and necrosis of the alveolus have sometimes been brought on by too much haste, or by too much force improperly exerted.

The wedging also may easily be responsible for transmitted infection if the wood or appliances used have not been properly attended to as to cleanliness and sterilization. This should never be overlooked.

New wood in toothpicks coming in original packages from the factory are supposed to be clean and untainted with any sort of disease germs, but it is easy to sterilize the entire package by the use of a few drops of formaline, the picks being enclosed in a box that will retain the vapors a sufficient time.

It is easy to scrape or whittle a piece of wood toothpick or otherwise produce a fresh new surface before use. While speaking of toothpicks of wood we might say they are handy in many ways about a dental case. One may be used as a spatula to mix a small quantity of cement, and to carry it to the tooth. Touched with a bit of cement an inlay can be picked up and carried to place with a toothpick and then used to wedge the same tightly in place. To keep a wooden wedge from sliding up into the gums when we desire to keep them from so doing, the pick may be coated with a thin film of cavity varnish, and allowed to dry a bit before use. This is of little use if teeth are wet.

Several years ago some inventive genius got up some beveled strips of soft vulcanized rubber for separating, but they were found too vigorous in most cases, causing unbearable pain, often, and consequently, soreness, by their forceful and steady unrelenting pressure.

Caution should also be used in endeavoring to wedge teeth already sore from some inflammation or disease of the peridental membrane, as such endeavor often brings acute inflammation that results in serious trouble before it is brought under subjection. In other words, a severe condition of pericementitis might be induced which we all know is very hard to tolerate, being sensitive to the pressure of the tongue even, and preventing any comfortable occlusion of the jaws.

A bit of absorbent cotton may be kept between two teeth as

incisors where it is difficult to retain it otherwise, by first passing a bit of floss through, then wedge in cotton wool as desired. Now take the ends of the thread and tie a knot tightly about the cotton, the teeth thus binding it on two opposite sides, and the floss binding all transversely, so it can not easily be dislodged.

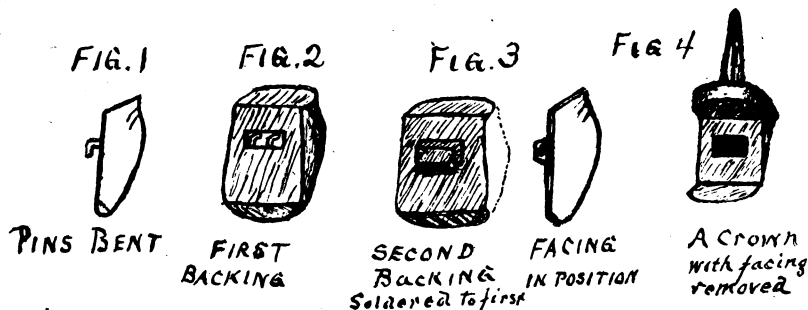
Probably more good roomy separation is required for inlay work than for the usual filling. The inlay is so rigid and unyielding that it will not stand any serious binding in an effort to adjust it, and its bulk must be accommodated. It must go to place freely.

(To be continued.)

METHOD OF MAKING A BRIDGE WITH REMOVABLE FACINGS, USING THE OLD STYLE FACINGS.

BY E. L. SIMMONS, D. D. S.

The facings are ground as usual for bridge work. A 24-karat gold backing is then burnished to place as usual. Then the pins are bent in this fashion (Fig. 1). The backing is then placed on a pine board and a cavity cut in it just large enough to slip on and off the facings (Fig. 2). This backing is then placed on the facing and re-



burnished. Then a small amount of wax or plaster is built up over this cavity in the backing large enough to cover it and a little higher than the pins (Fig. 3). An impression is then taken, with moldine or any of the other methods and a die and counter die is run up of the backing with carving in place and also facing (Fig. 4). Twenty-two-karat gold is then swaged and trimmed to fit the backing and facing. This is soldered to the first backing and the crown or dummy is then finished as usual. I have made these as crowns and bridges a number of times and have had good success.

ORIGINAL CONTRIBUTIONS

TOOTHsome TOPICS.

Almost a Tragedy.

BY R. B. TULLER.

Lancelot Lippincott—Dr. Lancelot Lippincott was restless.

Just why, if he had been unexpectedly asked, he hardly would have taken the trouble to explain, if he could have given unhesitatingly a lucid answer.

He probably would have said, "I? I'm not restless." Ah, but something was on his mind. And yet to tell the truth his mind was sort of absent. Strange paradoxity.

As he paced his office floor back and forth as far as the limited space would allow (for be it known he occupied an office in a sky scraper in the heart of Great Chicago at an expense of \$4.00 per square foot per month) he would pull out his golden time piece (cases warranted good for twenty years) and note the hour—or, rather not note the hour positively enough to have told the time, had he been asked as soon as the case had snapped together. In the event of such a query he would have pressed his thumb on the little serrated knob, exposed the face, and after pulling himself together would have answered, "11:40."

This in fact was the hour; not 11:40 p. m., but 11:40 a. m. To be absolutely correct, it was 11:41 a. m.

Lancelot Lippincott on this particular day would pause occasionally in his pacing, and, stepping close to the window, press his fretted brow against the great pane of glass and gaze at the passing throng away down in the bottom of the street below, 200 or more dizzy feet.

Had Lancelot Lippincott's mind been on the thing he was doing, he perhaps would have hesitated to have hazarded his life in such a reckless foolhardy way. Between him and death there was but the thin thickness of brittle glass. Had that suddenly given way as his head was pressed against it, he would have been precipitated headlong to the pave below; and not only would Lancelot Lippincott's life have been sacrificed, but some one or more unfortunates in the passing throng below would have been *hurt*ed, if not killed.

People, as they passed and repassed on the walk directly beneath, little dreamed of the peculiar danger which threatened them from above by the foolhardy or absent-minded act of Lancelot Lippincott. Thrilling as was this situation, not then nor at any time since, we are sure, has he realized the danger in which he put himself and others.

Such is the daily life in a great city. One can never tell where he's at—or when.

Across this street in another sky-scraper that forms the opposite side of this deep street canyon or abyss, many people were watching with bated breath (rubber necks with rubber dam on some of them) and wondering if this reckless fellow had suicidal intent and life insurance; for he had his hands so buried in his trousers (pants) pockets that it would have been quite impossible to clutch at anything that might prevent his fall.

But, Lancelot Lippincott was not the center of *all* the observation from the opposite windows, for a more thrilling performance than his listless, devil-may-care attitude was being performed at the window immediately above, of which however he was unconscious. There, swung in mid air, on the dizzy outside of the glass, with only his toes resting on the narrow ledge, and kept from falling by rope sling, was a man going through the extremely hazardous evolutions of washing the window.

As I have said, Lancelot Lippincott did not know of this, and to be fair, he did not know that he in any measure divided attention. He was oblivious to the peculiar situation. All he was thinking about at this time was that it must be near noon, and that a patient was due that was likely to make him late getting his luncheon.

Stepping back from the window, to the relief of nervous women watching, opposite, if not men, he wandered again about his space, which indeed was little enough when his dental chair, other chairs, a cabinet and a dinky desk took up part of his ten square feet of operating room. Again he referred to his watch, and then to a little clock on his case, comparing the two, and now more conscious of the exact time than earlier in our story.

It was close on to 12 o'clock. In fact, on a temple some little distance away, a great black sphere was slowly climbing a flag pole, and seemingly by its own volition or by some automatic power, as no human hand was visible. It was the Great United States Time Ball that every day goes up at exactly 11:55, lingers a few minutes in view of thousands and thousands of uplifted eyes that have been

watching for it, and then suddenly drops out of sight. When that momentous thing occurs, it is exactly 12 o'clock by both standard and meridian time in Chicago.

Thousands of watchers near and far, watch in hand and fingers on the setting post, turn the hands forward or back as may be required to set to correct time; and then most of them hasten away to swell the busy throng in the street moving hither and thither—mostly thither—to Buffet (chink-gingle-gurgle!) to reinforce or oil up the wearied human machinery that has been given over to toil since early morn; or to a cafeteria (num-num!) to get a snack. Those who do not go on Time-Ball time and get back at the one o'clock whistle toot, are the leisurely rich, or the high salaried who go about one or two o'clock and get back some time later—perhaps next day—and don't give a dum about the great Time-Ball.

Lancelot Lippincott (we'd nearly forgotten him, pardon!) like thousands of others watched the time ball, with time piece in hand. There was on his face a look of firm, set determination. It was a look that spoke. Or did he murmur audibly? "If she isn't here by 12, I'm going to lunch. She was due at 11:30 sharp. She is never on time. Not yet but soon. It will serve her right if I make her wait a while for me this time. Wish I could cut her out; she's a terrible cry-baby."

Suddenly the ball fell; Lancelot's watch snapped shut and Dr. Lancelot Lippincott was going to—well, maybe, to the buffet. It is not for us to say. He was just tearing from his shoulders his office coat—had one sleeve nearly off when patter, patter, patter, came two feet along the marble corridor. There was a hasty buzz of the electric buzzer, and into the room dashed a maiden—a maiden lady—flushed and flustered, remarking, "I'm a little late, Doctah," as though the doctor did not know. The crisis was met; Miss Mary Jane Tillinghurst had kept her engagement!—and cried as usual.

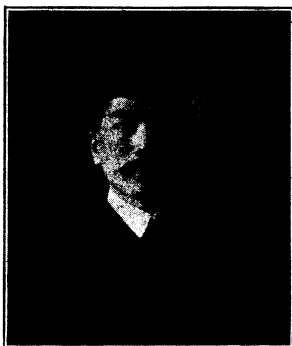
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Doc Lippincott slowly and reluctantly raised his arm and readjusted his office coat on his shoulders, and should have been pleased that he did not get away and take any chances of losing business; but to tell the truth he was looking down in the mouth for fully an hour, and only cheered up after the patient had gone, leaving ten plunks. High building prices, ten an hour; but, what, ho! Look at Rockefeller and others who make that while you wink. It is a strange world and dangers threaten many of us, but *all* are not in high buildings.

THE REVIEW OF DENTISTRY IN JAPAN.

BY KANEMATSU TANIUCHI, D. D. S.

The Japanese medical education is one of the branches of education that is rapidly improving in that country. Half a century ago Japan opened her doors to Western civilization, inviting it in to reform her national life. Japan has sent many young governmental pupils to study medicine in the schools, colleges or departments of universities of Germany, the most distinguished country in the study of medicine in the world today. Therefore, the Flowery Empire is more rapidly improving in medicine, both in practice and theory, than in any other branch at the present time.



In the Russo-Japanese war, 1903-4, the Japanese surgery was shown to be one of the most improved of any of the countries, this showing wonderful progress in so short a time. On the other hand, dentistry in the empire of the mikado is more slowly improving than in any other branch in that country at the present time. For a long time the Flowery Kingdom and her inhabitants did not take interest in dental surgery, and knew nothing of the art of dentistry at that time. But fortunately now Japan is awakening to the importance of the art of dentistry; for example, since the Russo-Japanese war our imperial government has begun to keep doctors of dental surgery in her army and navy departments, with the special honors conferred upon them. The Russo-Japanese war, one of the greatest wars in the world, made the improvement of dental surgery in Japan; and, also, Japan has sent the governmental students to study dentistry in America for the dental department of the Imperial university of Tokyo.

THE HISTORY OF THE TOKYO DENTAL SCHOOL.

Tokyo is the key to Japan. It is more like Mecca to the Ma-

hometan than like Washington to an American or Ottawa to a Canadian. The fact that this is the largest city of the Flowery Empire means less to the native mind than that it is the home of his imperial majesty, the emperor, whom all Japanese regard with real reverence, as well as unquestionable loyalty, and whom most of the people worship as a divinity. Here, too, center all national interests and enterprises; this is the commercial and educational capital. Tokyo leads Japan. Hither every ambitious youth hopes to go; and the fact that a cook, an artisan or a student hails from Tokyo gives him prestige wherever he may go throughout Japan. Tokyo is the home of the Tokyo Dental School, and it is the only dental school in the Flowery Kingdom today.

About thirty years ago Kisai Takayama, who is now one of the prominent dentists, journeyed to San Francisco to study the American system of dentistry. He learned the dental profession in several years in a private institution, returning to his native country, Japan, with great ambitions, and became a distinguished man in his native land. He organized a private institution of dentistry for the education of the dental profession in Tokyo, his birthplace, and this was the first dental school to be established in Japan. In due time this school was called the Takayama Dental School. He also published a monthly dental journal. He translated many American books into Japanese, and then the Japanese emperor conferred a high honor upon him by electing him as doctor to the imperial family for his merits to Japan. He also received the decoration of Number Six from his imperial majesty, the emperor.

Dr. Kisai Takayama taught his school several years, then gave up his institution to his intimate friend, Dr. Morinosuke Chiwaki, who was one of the students of the Takayama Dental School in an early day and now president of the Tokyo Dental School. This institution of dentistry is now termed the Tokyo Dental School of Tokyo. This school is located in the center of the most populous part of the city of Tokyo, and course of institution is graded and progressive, extending over three years, but it is a very inferior school as yet.

I would say that Japan needs a more improved dental institution such as are found in the United States of America.

THE HISTORY OF DENTISTRY IN JAPAN.

Japan has no records of dentistry before the Takugawa Shogunate, who was shut off from Japan and all the world for two and a half centuries. The people were imprisoned within their own island realm and deprived of all stimulus from without, and the country thus ceased her progress. In that period the Japanese imperial family had the doctor, or "Gotenii," who cured the diseases of the mouth especially, besides physicians and surgeons. There were doctors of dentistry, or "Yoshii," who practiced dentistry among our common people, and also divided themselves into three classes, namely, (1) Kookuka, operative dentistry; (2) Irebashi, prosthetic dentistry, and (3) Batsushishi, extraction of the teeth only.

DENTIST, OR "YOSHII."

About twenty years ago the Flowery Empire had not a school for the education of dentistry, but there were many practitioners who had never learned their profession in school. They were not respected among their people, for most of them were not given to earn their money honestly, but were prone to be dishonest in their practice.

AN AMERICAN SYSTEM OF DENTISTRY.

About forty years ago an American dentist, name unknown, went to Yokohama, Japan, and practiced his profession. He had many young Japanese pupils, who wished to study an American system of dentistry. Yeinosuke Obata, one of the pupils of the American dentist in Yokohama, is the first practitioner of an American system in Japan, therefore we are calling him "Father" of the Japanese dentistry. He began practice in the capital city, Tokyo, about thirty years ago, and he is practicing his profession yet. About three or four years after him, Kisai Takayama, a famous practitioner, came back from America to Tokyo, where he learned an American system of dentistry, and distinguished himself in that country, and is organizer of the Takayama Dental School.

At the present time there are three most distinguished dentists in Japan, who taught the new system of dentistry to many youths, and their most distinguished pupils are as follows:

PROCEEDINGS OF THE AMERICAN ACADEMY OF DENTAL SCIENCE.

A regular meeting of the American Academy of Dental Science was held at Young's Hotel, Boston, February 7, 1906. President William H. Potter in the chair. The subject for the evening was: "The New Silicate Cement, or Artificial Enamel." Short papers were read by H. Carleton Smith, Ph. G., instructor in chemistry Harvard Dental School; Drs. R. R. Andrews and H. E. Cutter, of Cambridge, and William Y. Allen, of Boston.

PAPER BY H. CARLETON SMITH, PH.G., INSTRUCTOR IN CHEMISTRY,
HARVARD DENTAL SCHOOL.

In considering the question of dental cements one of the first things brought to our attention is the fact that, as a rule, they are not of American manufacture, but come very largely from Germany. Perhaps we may wonder why; we may find our answer in a remark recently made by one of the professors at the Massachusetts Institute of Technology who said that the graduate of a German dental school was a better chemist than he was a dentist. He knows better how to make dental cements than he knows how to use them, and he has to send to this country to learn how to use the preparation of his own manufacture. It seems to me that a cross between these two extremes might be desirable in our dental education. If he had considered this subject a few months ago I should have spent some time on the discussion of oxy-phosphate of copper cement. Tonight greater interest centers around the New Artificial Enamel, and I shall say nothing about copper unless some one is curious. In comparing the usefulness of the old and the new forms of cement it may be worth while to first examine the chemical institution of the ordinary oxy-phosphate cement. This consists, as you all know, of a powder which is presumably a nearly pure oxid of zinc and a liquid which consists mainly of phosphoric acid, these two being united in such proportions that they shall form a basic or oxy-phosphate of zinc. The books tell us that the nearer we approach to absolute purity in both of these substances the more desirable is the resulting preparation, and while this is in a sense true, it is also in a sense far from the truth. According to Dr. Remsen, the oxid of zinc on the market today is made by a combined process which produces zinc oxid directly from the ore as taken from the earth which does not seem to be so well calculated to produce

a perfectly pure oxid as the old and slower methods of burning the zinc in the air or igniting a precipitated basic carbonate of zinc. Probably the purest oxid of zinc would be that obtained by ignition of a chemically pure zinc nitrate.

The liquid which we have been told is simply a delequessed phosphoric acid, we find upon examination contains also various amounts of zinc phosphate and occasionally aluminum phosphate. The presence of a very slight amount of these metallic phosphates prevents too rapid setting of the cement. Another question which should be answered before we can properly draw conclusions as to the superiority of artificial enamel is why the ordinary phosphate is so easily soluble in the mouth. I am told by many of you who have had practical experience that oxy-phosphate of zinc will dissolve in any mouth irrespective of the character of the saliva or of the care taken of the teeth. Further, the cement so situated as to come in contact with particles of food which may find lodgment and may subsequently ferment, will dissolve much more rapidly than if not so situated.

Many investigators have laid the fact of this solution entirely to the action of lactic acid and lactic acid is undoubtedly a factor in the destruction, not only in cement but also in many cases of the tooth substance itself. The theory advanced by Dr. Kirk some time ago in regard to the formation of lactic acid compounds of magnesium and calcium and the fact that these compounds may be discovered by the use of polarized light and indicates erosion due to lactic acid is, without doubt, sound theory.

The presence of lactic acid in the mouth is probably due wholly to processes of fermentation; in other words, it is doubtful if lactic acid is a secretion of the salivary glands. Until very recently it has been claimed that lactic acid, acetic, butyric, or any other acid, except hydrochloric, found in the stomach was always due to fermentative processes; today the question is raised that possibly very minute traces of lactic acid may enter the stomach as a physiological secretion, but no work, so far as I am aware, has been done to show that even this is true of the saliva. In view of these facts it seems to me that we have a right to look for something else which may act as a solvent of oxy-phosphate cement. Dr. H. E. Cutter tests his cements by the action of ammonia water and I have to thank him for a suggestion along this line. Ammonia water easily dissolves oxid of zinc, the cement as it goes into the tooth is a basic phosphate and while it may

be possible to use the exact molecular proportions to form a basic phosphate without any excess of zinc oxid, I believe that this very rarely happens in actual practice and that the great majority of phosphate fillings will contain more or less oxid of zinc uncombined, consequently if ammonia will dissolve oxid of zinc it is reasonable to suppose that cement containing even a minute trace of uncombined oxid of zinc will be attacked and disintegrated by ammonia.

Ammonia does not occur as such in the saliva; the alkaline reaction of the saliva is due to the presence of the disodic phosphate and possibly, according to Professor Chittendon to traces of acid carbonate of soda and to these two substances only is the alkalinity of the saliva due. The saliva does, however, contain ammonium salts—notably ammonium chloride. Now ammonium chlorid has a solvent action upon zinc oxid and will in a test tube disintegrate oxy-phosphates in much the same manner although very much more slowly than does the ammonia water. As suggested by Dr. J. E. Stanton, it seems to me that this fact may account for the disintegration of cements when so situated that lactic acid may be practically ruled out of consideration. Of course when lactic acid is also a factor, that is, when the cement is so situated that it is acted upon by the products of food decomposition, the dissolution takes place much more rapidly, the lactic acid being without question a much more energetic solvent of oxy-phosphate of zinc than is ammonia chlorid. Dr. Witt-haus is authority for the statement that oxid of zinc is absolutely insoluble in neutral solvents but either this statement is at fault or else I have been unable to get pure oxid of zinc.

So much for the composition and disintegration of the old ordinary oxy-phosphates. In regard to the New Artificial Enamel, we find that the patent specifications, under which this preparation is produced, claims that the powder consists of a mixture of oxids of beryllium, silica, aluminum and calcium and that the liquid is a 50 per cent solution of phosphuric acid in which aluminum phosphate has been dissolved nearly to saturation and then to which, a slight amount of phosphate of zinc has been added. I have made qualitative tests on this preparation and to a limited extent to a few others and believe that the specifications of this patent are faithfully carried out so far as the particular preparation which I examined goes. In the enamel which I examined most carefully and will call No. 4, beryllium oxide was found to be present in considerable quantity. Some

time was consumed in the positive separation of beryllium from zinc. I find the books give various methods as to the separation of beryllium from aluminum, but it was some time before I could find a satisfactory method for the separation of beryllium from zinc, as it dissolves in the same solvents and salts generally respond to the same reactions. The separation of beryllium was finally effected according to the following directions: fuse a little of the powder with sodium carbonate (or double sodium potassium carbonate); dissolve the fused mass in dilute hydrochloric acid; evaporate to dryness and heat to 120 C. to dehydrate the silica; take up in water a little hydrochloric acid and filter; to the filtrate add a little ammonium chlorid and excess of ammonium carbonate. All aluminum hydroxid and beryllium hydroxid will both be precipitated, the latter compound will be redissolved in the excess of ammonia carbonate; filter off the aluminum and the clear filtrate upon continued boiling will give a white flocculent precipitate of beryllium hydroxid.

Beryllium is a comparatively rare metal which has been also known by the name glucinum. It resembles aluminum in its physical properties, and in its chemical properties lies between aluminum and calcium. It has a tendency to form basic salts much after the manner of zinc, and these salts have somewhat of the same properties as the zinc salts. The beryllium nitrate appears in trade catalogues in two forms, one water soluble and one acid soluble. An ounce of water soluble was obtained, but it does not dissolve except with the addition of considerable nitric acid. Some of this nitrate of beryllium was strongly ignited in platinum with the resulting formation of sample of oxid contained on this vial. This powder with phosphuric acid produces a decidedly sticky mixture and this oxid undoubtedly plays an important part in making artificial enamel sufficiently adhesive for dental use. Various cements which have been sent to me for comparative tests, have given satisfactory results as regards their hardness and solubility. Some tests were made with the liquid of the artificial enamel and the powder of the ordinary oxy-phosphate cement which gave practically the same results as when the ordinary oxy-phosphate cement was used just as when it was sold; that is, it seemed to me, that these experiments show also that the difference between these two cements lies largely in the character of the liquid containing aluminum phosphate.

As I previously stated, my experiments have been very incomplete

on account of lack of time, but, from what has been done, I believe that artificial enamel will be found valuable in so far as it contains beryllium. Other cements have previously been made containing silica and aluminum but have lacked the qualities of adhesiveness and insolubility which is possessed by this preparation. Of course, my opinion has been based on laboratory experiments. It has been claimed that some of these preparations do not wear smooth. I can easily understand that this may be due to the presence of silica which is not in complete chemical union and which is more resistant than the composition of the cement aside from it.

CEMENT.

PAPER BY R. R. ANDREWS, D.D.S., CAMBRIDGE.

If we read the signs of the times correctly, we shall find that in our profession the trend of thought, with many of the older members, is in the direction of using more conservative methods in saving the teeth of our patients.

The long tedious operation of packing and condensing large cavities with gold is with many men a thing of the past, and other methods, accomplishing the same results, are sought for, or are now in use. One of our more prominent dentists stated to me recently that he was not using as much gold for filling the teeth, in his practice, as he did a few years ago, and as a result he believed he had saved more teeth.

Inlays of gold and porcelain and even inlays of celluloid, are now taking the place of gold foil for stopping large cavities, and as the permanency of these substitutes depends largely for their success on the manner of holding them into place within the cavity, it is evident that the subject of Cement becomes an important one for us to consider, not only from this standpoint, but also from its use as a filling material.

In an able article in the July *Cosmos* for 1905 entitled "The Cement Problem for Inlay Work," by Dr. George C. Poundstone, of Chicago, he makes this statement: Most dentists can, with care and perseverance, make a perfect inlay, exact in its shape and beautiful in its shading, but what does that signify, if after a week, a month or even a year, we find this work of art—if you find it at all—hidden

away within some vase among the other family porcelains and jewels, or lying quietly in the corner of some pill box in some upper bureau draw?

"To keep an inlay in position in the cavity, without spoiling its original beauty, is the problem before us. What cement to use, is the question. Some cements will not stick; others expand, so that what at first appears to be a perfect joint is, after a day or two, a broad line of cement, while still others are permeated by the fluids of the mouth, micro-organisms, and the debris, giving the inlay the appearance of being several shades darker than the tooth. Until we can procure better cements, the inlay cannot reach the high degree of perfection hoped for it."

Dr. Poundstone then shows the results of numerous experiments testing the fineness of the cement under the microscope, and, after studying these tests, he states as a result of his research, "It is my belief that most inlays are retained in position solely by the retention from the cavity, the accurate fit of the inlay, and the cement on the one hand, and the cavity wall and the cement on the other; and that, after a few days, there is a film of moisture between the cement and the cavity wall, and between the cement and the inlay, formed by etching or grinding, on the other."

This series of experiments made by Dr. Poundstone is not particularly helpful to those of us who need assistance in looking for good cements. He gives it to us merely as a statement of what was revealed to him by microscopical research work. Another paper in the same number of the *Cosmos* for July, 1905, entitled "Tests on the Inlay Cement Problem," by Dr. Joseph Head, of Philadelphia, is much more helpful and practical for us. He goes into the subject in a practical way and, after making many tests by measuring the force required to dislodge porcelain pieces from cavities under various conditions, as used in practice, states his conclusions: "That glazed or ground porcelain, cemented to smooth ivory, has but little power of adhesion from the cement, that a thin film of cement is not as strong a bond as a thick mass." He states that the edges of a filling and cavity should be in as close apposition as possible, but wherever feasible, the cement that holds the filling in the cavity should have body. He states that etching of porcelain with hydrofluoric acid is a valuable means of obtaining adhesion of porcelain with cement on flat, shallow fillings, yet undercuts are to be preferred where they

can be obtained, and there is good reason to believe that the best results can be gained by both undercutting and etching the filling. Reduction of grit in the Harvard cement adds to the strength and power of adhesion. This is a law that may be applied to all cements if they are not thereby made to set too quickly.

Recent literature has shown us that large numbers of inlays, both porcelain and gold, are being used by the profession, more today than ever before. We hardly realize the worth and importance of this method in treating the larger cavities. Some of the most beautiful work that I have ever seen has been inlays of gold in the bicuspid and molar teeth. I believe that Dr. Head's advice is valuable when he states that the portion of the inlay within the cavity should be somewhat smaller than the cavity itself, that the inlay should be etched and grooved and that the cavity should also be grooved. If we now can find a cement that has a translucent appearance, and will stand the secretions of the mouth without wear, then an inlay, either of gold or porcelain, becomes the ideal filling. The principle is correct, and I think that the time is coming when most of the large work will be done by this method. In a practice of over forty years I have had an average experience with cements, and fully realize that this material is a real value in saving teeth. It has been my practice for years to use it in the mouth of young patients as preparatory fillings, and I know its value here. Occasionally these cement fillings last for years. I have an inferior molar in my own mouth that has been saved by a cement filling put in forty years ago. The filling, an oxy-chlorid cement, is on the occlusal surface. The last mending by oxy-chlorid has done good service, without repair, for twenty years, though somewhat worn out.

Among the oxy-phosphate cement, the Harvard ranks the best. Eisfielder's No. 7 a dark yellowish brown filling, used in the back of the mouth has given some excellent results. Recently I have used the petroid improved, which I think is an excellent cement. Last May Dr. H. E. Cutter brought to me a sample of an enamel cement, requesting me to try it and see what I thought of it. It proved to be Ascher's Artificial Enamel. I tried it and thought I found it, in some ways, superior to anything I had used. It seemed to have qualities that other cements lacked. I used it at first cautiously, remembering the experiences that I had had with other new cements, but now, after nine months, I am using it with increasing confidence although not

sure of its permanency. My experience teaches me to rank it as a higher and better grade of cement than any that I have heretofore used. It requires more care in working than any other cement. In cases where others wash or wear out, Ascher's remains. Fillings placed in cavities nine months ago show no traces of wear, and this in places where the best of the ordinary cements would have worn badly in that time.

Ascher's Artificial Enamel, rightly mixed and placed, with proper shade, makes the most beautiful cement fillings that I have ever seen. The use of it is almost an art that conceals art. In appearance it is much like the tooth, vastly better than gold in this respect, and if it were not as good a preservative of the tooth as it promises to be, it yet has a strong claim. After its use patients have expressed a desire to have it used again, instead of gold, even if it has to be replaced in time.

There are several important points, experience teaches me, that should be used to obtain the best results with this material. Cavities should be prepared as though for inlays having retaining grooves, and the margin sharp and square. There should be no lapping over the edges of the cavity by the cement, or there will be chipping. My assistant mixes the cement to a consistency of soft putty with an ivory spatula. When thoroughly mixed, she passes it to me and I press it into place, using considerable force. In approximal surfaces I use glazed silk strips which have been smeared with vaseline. These I pass between the teeth against the filling, and try to force it further into place. The filling is so adhesive that care should be used here. It will sometimes stick to the strips in spite of the vaseline, and this may start the cement from its hold. It should be kept from moisture for at least fifteen minutes. Results with me have been more than promising. I have used it in setting inlays in a number of cases, and if there is space between the inlay and the cavity, where this thicker cement can be used, I am led to believe that this is the cement that we need. It has a translucent appearance, and thus far seems to stand the secretions of the mouth without wear. To my mind it is one of the most promising cements that we have ever had.

—*Journal of N. Y. Institute of Stomatology.*

ANESTHETICS IN DENTISTRY.*

BY W. H. DE FORD, A. M., D. D. S., M. D., DES MOINES, IOWA.

ELEMENTS OF DANGER—SHOCK (CONTINUED.)

An anesthetic tends to lessen shock. Leslie Stephens, in his "Playground of Europe," page 87, tells this story. A guide one day got drunk and walked over a pass in the Alps which was very narrow. The road in its most dangerous part was guarded by a railing, but the railing stopped rather short at each end of the narrow place. The consequence was that the drunken guide, when he came to the end of the railing, instead of walking along the road, walked over the precipice and fell nearly a hundred feet. He was picked up not much worse for the fall, and the advice the author gives is that if you are going into places so dangerous you had better not get drunk lest you fall over, but if you are going to fall over, you had better get thoroughly drunk, so as to avoid the shock that might otherwise occur.

Brunton relates the case of a man who jumped from the Dean bridge, in Edinburgh, which is more than a hundred feet high. He landed on the rocky bed of the small stream that runs underneath and there was not much more than a foot of water to break the fall. He only broke both thigh bones, and was taken up without receiving any dangerous shock. Brunton says he saw him a fortnight afterward hopping about on crutches, and he made a good recovery. He was very drunk when he fell over, and the anesthetic produced by the alcohol had greatly lessened the shock.

Another cause of *shock* is operating in the preliminary stages when anesthesia is being induced, or in the later stages when it is passing off. Again consulting the authorities mentioned in the last chapter (Snow, Sansom and Turnbull), paying attention as to what time during anesthesia most deaths occur, you will discover that nearly all the fatalities happen during partial anesthesia—that very seldom a mortality is reported during profound anesthesia. It is usually as the patient is going under or as he is coming out, but

*We continue the paper of Dr. DeFord on "Anesthetics in Dentistry. In view of a number of recent fatalities "in dental" chairs, we urge all who use general anesthetics to carefully read and digest these papers; we regard them the best that have been presented to the profession in recent years.—*Editorial Practical Dental Journal.*

while the patient is thoroughly under the influence of the anesthetic one rarely hears of any kind of an accident.

Lauder Brunton speaks of having witnessed only one death under an anesthetic. "It was a man who was having the supra-maxillary bone removed for malignant disease, and the whole of the orbit was exposed. On account of the risk of blood running down into the trachea and choking him during anesthesia, he only had a few drops of chloroform at the beginning of the operation, just enough to allow the preliminary incisions to be made. The whole of the rest of the operation was conducted without any anesthetic whatever, and the man died on the table from the *shock* of the operation." These times of partial anesthesia are just when *shock* makes itself felt.

In profound anesthesia, if we go too far, far enough to stop the breathing, there is a certain amount of risk; but bear in mind that the breathing ceases in nearly all cases before the heart is affected, and the moment there is anything wrong with the breathing, begin at once to take measures to re-establish the breathing.

As more deaths occur from *shock* than all other causes combined during anesthesia, it is important to know what measures may be adopted to prevent it.

Let us consider first that class of cases in which *shock* results from irritating the respiratory organs; those cases in which the patient suddenly dies after taking two or three inhalations of chloroform, from *spasms of the glottis*, produced by vapor sufficiently strong to irritate and cause "choking." If we administer chloroform very dilute and gently, we get no *shock* whatever either in plants or animals.

Sir James Simpson, who introduced the use of chloroform, performed experiments on that most delicate of all plants, the sensitive plant, the *mimosa pudica*. As you know, if you touch the leaflets of the sensitive plant, the leaves at once fold up together, and the leaf falls down upon the stalk. Sir James found that if the sensitive plant is put in *strong* chloroform vapor the leaflets shut up, and finally the leaf falls down, just as if you had irritated it in any other way. The chloroform acts as a strong irritant to the plant. If, instead of applying strong vapor, you apply very dilute vapor, it apparently has no action at all on the plant; but if you touch the leaflets after the vapor has been applied for a length of time you will find they are no

longer sensitive. Therefore we see that strong chloroform vapor acts as an irritant before it produces anesthesia of the plant; the *diluted chloroform vapor does not produce any irritation at all, but simply produces anesthesia.*

The same is true with the rabbit and guinea pig—diluted chloroform produces anesthesia without irritation, but if we use strong vapor, suddenly, we irritate the vagus reflexly through the fifth nerve and the heart and respiration will cease, and what is true of plants and animals holds good in that higher animal, man. The irritating general anesthetics, then, should be administered in dilute form, starting with just a trace of the vapor and gradually increasing the strength, as the nerves along the respiratory channel become accustomed to the anesthetic, or are themselves anesthetised.

I have heard Dr. A. C. Hewitt relate this case: One of his little patients, in playing, fell, cutting her tongue so badly surgical procedure was necessary. Two surgeons were summoned, and employed all means known to them to anesthetise this little girl. She was so frightened and excited they were unable to control her. The anesthetics employed simply increased the excitement and they failed to get results. After an hour or so of struggle the father, seeing they were not going to succeed, said to them: "Our family dentist has given her chloroform on several occasions for filling teeth, and I wish you would consent to his coming and see if he can not anesthetise her." Worn out with the trying, they consented. Dr. Hewitt talked to her a few minutes, calmed her, placed her on a sofa, and, pouring a little chloroform on a handkerchief, held it some distance above her face. At first she got just a trace of the anesthetic, not enough to irritate, not enough to cause her to antagonize it, and in a few minutes was sound asleep.

That variety of *shock* that results from the sudden application of irritating anesthetics can be avoided by admitting large quantities of air, in the beginning, with just a small amount of the anesthetic vapor. We must be careful about the strength of our anesthetic in the beginning, because patients have idiosyncrasies in regard to anesthetic agents the same as with other drugs. A few drops of chloroform or ether will more completely anesthetise some patients than two or three ounces will others, and you can not determine this in advance.

On one occasion a patient returned to my office with a perice-

mental irritation, the result of an immediate root filling. My iodine and creosote bottle accidentally fell from my hand, struck the iron base of the chair and broke. In this predicament I saturated a small pellet of cotton with chloroform and applied it to the gum, on both buccal and palatine sides, just as I would have done the iodine and creosote. That amount of chloroform was in this case sufficient to produce sleep of five minutes' duration. Having discovered she was so susceptible to chloroform, on several other occasions, with the amount of chloroform indicated, I prepared a number of sensitive cavities for fillings. Had it been necessary for this young woman to take chloroform for a surgical operation, being so susceptible to its influence, the quantity usually given by most anesthetists in the beginning might have produced *shock*.

It must be constantly borne in mind, then, that in administering general anesthetics there is a difference of susceptibility on the part of the patient, and you can make no mistake in beginning with a dilute vapor, while you may produce serious results with a strong vapor.—*Dental Brief, Practical Dental Journal*.

ANOTHER DOG CASE.

January 14, 1907.

Reese & Wiedhofft, Chicago:

Gentlemen—I am enclosing impression and bite for one anterior bridge. You will observe that it is an unusual case, being that of a d— fool dog whose master has gone crazy over. Please make full crowns for abutments and facing shade 26, S. S. White.

As I have not in my possession your prices on dog work I request you to ship it C. O. D., U. S. Express, unless you think my word sufficiently good when I say I will remit immediately on receipt of bill.

Please finish bridge complete as I have no desire to “try it on the dog” again.

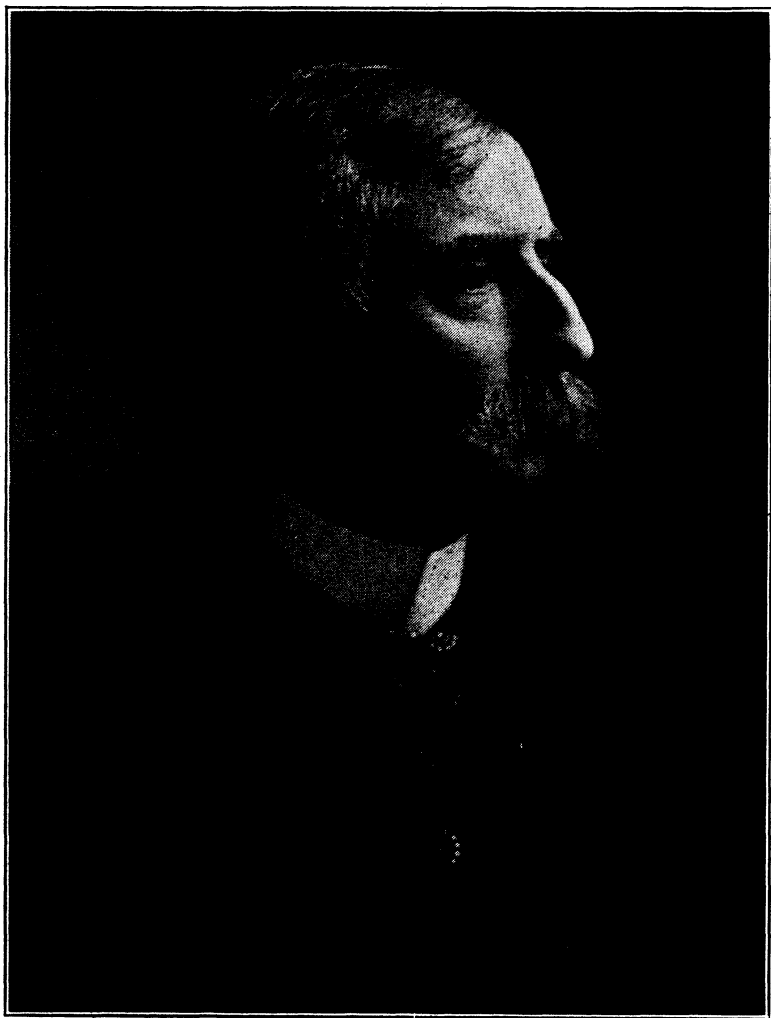
Should I wire you for accommodations at the Hydrophobia Hospital please arrange with them, order me a muzzle, pay my dog-tax, and leave me to my fate as you will know that I’ve been “stung.”

Sincerely,

G. I. B.

DR. CHARLES C. CHITTENDEN.

Resolutions of Respect Passed to His Memory by the National Association of Dental Examiners, in Session in Atlanta, Ga., September 14, 1906.



WHEREAS, Dr. Charles C. Chittenden, late of Madison, Wis., was for many years a valued and prominent member of this association,

having in the course of his connection therewith graced the meetings of this society by acting as its president, and having for many years occupied, with marked distinction, the position of chairman of the committee on colleges, where he rendered services of inestimable value, not only to this association, but to the whole profession of dentistry at large, and

WHEREAS, Dr. Chittenden departed this life in the month of December, 1905, and

WHEREAS, This association, in regular convention assembled, unanimously adopted a motion appointing a committee to prepare suitable resolutions touching this sad and lamentable event, therefore your committee recommends that it be

Resolved, That in the life of Dr. Chittenden he exemplified all the graces and virtues of an upright Christian gentleman, the fidelity and affection of a loving brother in the truest and broadest sense of these words, the patriotism and public spirit of a true and loyal American citizen; and, through the inherent force of his firm and manly character, his courteous and kindly nature and his sympathetic and affectionate disposition, he enjoyed the confidence, respect and esteem of a large and appreciative clientele, and

Resolved, That in his death his sorrowing family have lost a devoted, unselfish and affectionate member, at whose untimely demise we mingle our tears with theirs, and this society has suffered an irreparable loss in that it has been deprived of the benefit of his untiring and unremitting interest and work in all that made for the uplifting of the association, the improvement and advancement of the science of dentistry and for higher ideals and more permanent results in dental education; and that each member of this society who enjoyed the privilege of a personal acquaintance with him has lost the benefit flowing from the beauty of his character and the inspiration to better and higher things, reflected in his gracious and noble personality; and the world of dentistry has lost one whose whole life was a patient and constant struggle toward higher attainments, through more thorough, honest and conscientious methods of dental education; and the entire community has suffered a loss which it is hard to believe can ever be filled, and

Resolved, That these resolutions and the discussions thereon be

spread in full upon the minutes of this meeting and a copy thereof be sent by the secretary to the bereaved family.

(Signed)

J. A. HALL,

CHARLES P. PRUYN,

F. A. SHOTWELL.

DR. C. R. TAYLOR.

Resolutions of Respect Passed to His Memory by the National Association of Dental Examiners, in Session in Atlanta, Ga., September 17, 1906.

WHEREAS, Having just learned by telegram of the departure from this life of our friend and brother of this association, Dr. C. R. Taylor, a member of the Board of Dental Examiners of the State of Illinois, and

WHEREAS, Dr. Taylor had shown himself to be an honest and upright gentleman, and an earnest worker in this association for the advancement of higher requirements upon the part of those seeking entrance to the dental profession, and being himself an example of uprightness, probity, conscientiousness, integrity, industry, intelligence and gentility, we, the members of this association, keenly feel the loss we have sustained by his removal to that bourne from which no traveler returns; and mingle our tears with those of his surviving wife and daughter, while we endeavor to uncomplainingly submit to the inevitable forces of nature, which separate us from those we love, and

WHEREAS, We shall forever in this life miss the smile of his genial countenance, and the benediction of his personal presence, we shall always reap the benefits of the influence of the purity of his thought and the spirit of righteousness which permeated his whole character and illuminated his every action; therefore, be it

Resolved, That this resolution be spread upon the minutes of this association, and that an engrossed copy of the same be presented to his surviving family.

CHARLES P. PRUYN,

J. A. HALL,

F. A. SHOTWELL,

Committee.

MEETINGS

NATIONAL SOCIETY MEETINGS.

National Association of Dental Examiners, Minneapolis, Minn., July 26, 27, 28.

National Dental Association, Minneapolis, Minn., July 30.

STATE SOCIETY MEETINGS.

Alabama Dental Association, Birmingham, May 14, 15, 16, 17.

Arkansas State Dental Association, Eureka Springs, May 29, 30, 31.

California State Dental Association, San Francisco, January 2, 3, 4.

Connecticut State Dental Association, New London, April 16, 17.

Georgia State Dental Society, Atlanta, May 7, 8, 9, 10.

Illinois State Dental Society, Quincy, May 14, 15, 16, 17.

Maine Dental Society, July 16.

Minnesota State Dental Association, Minneapolis, July 30, Aug. 3.

Montana State Dental Society, Helena, April 12, 13.

Nebraska State Dental Society, Lincoln, May 21, 22, 23.

New Jersey State Dental Society, Asbury Park, July 17, 18, 19.

New York State Dental Society, Albany, May 10, 11.

South Carolina State Dental Association, Anderson.

Vermont State Dental Society, Burlington, May 15.

Virginia State Dental Association, Jamestown, Sept. 10, 11, 12.

Wisconsin State Dental Society, La Crosse, July 16, 17, 18.

ARKANSAS STATE BOARD.

The Arkansas State Board of Dental Examiners will hold examinations at Eureka Springs, May 27, 28, 1907. A. T. McMillin, secretary, Little Rock. The Arkansas State Dental Association will hold its annual meeting at Eureka Springs, May 29, 30, 31, 1907. Henry P. Hopkins, secretary and treasurer.

MISSOURI STATE BOARD.

At the last meeting of the Missouri State Board of Dental Examiners the following officers were elected: President, C. B. Coleman, Poplar Bluffs; vice-president, H. B. Purl, Kirksville; secretary-treasurer, S. C. A. Ruby, Clinton; delegates of the National Association of Dental Examiners, R. D. McIntosh, Monette, and S. C. A. Ruby, Clinton.

THE MINNESOTA STATE BOARD OF DENTAL EXAMINERS.

The Minnesota State Board of Dental Examiners will hold its next regular meeting at Minneapolis, in the medical building of the State University, on April 2, 3 and 4, 1907.

All applications must be in the secretary's hands by 11 o'clock of April 2. Candidates will be furnished all necessary blanks and such other information as is necessary upon application to George S. Todd, D. M. D., secretary, Lake City, Minn.

DR. BLACK HONORED AT ST. LOUIS.

The St. Louis Society of Dental Science tendered to Dr. Green Vardiman Black, of Chicago, one of the most prominent dentists in the United States, a complimentary banquet at the Jefferson hotel last night. About forty members of the society and guests attended. Dr. Burton Lee Thorpe was toastmaster.

Dr. Black was introduced in a short speech by Dr. George A. Bowman, of St. Louis. Dr. Black spoke on "The Profession's Progress," and dealt with the great progress made by American dentists. "In no other country has dental science advanced so far," he said. Dr. Black told of the progress made by the profession during his lifetime, and from the standpoint of a man who has seen history in the making.

Rev. Dr. W. C. Bitting, of St. Louis, spoke on "The Guardians of the Pearly Gates." "The Reward of the Scientists" was the subject of Dr. J. D. Patterson, of Kansas City, Mo. Dr. George Edwin Hunt, of Indianapolis, Ind., spoke on "The Other Side of the Professional Man's Life." Dr. Frank O. Hetrick, Ottawa, Kas., spoke on "The Fraternal Spirit." "The Missouri State Dental Association" was the subject of Dr. James W. Hull, of Kansas City, and Dr. Edward H. Angle, of St. Louis, spoke on "The Consolidation of the Fraternal Dental Society and the Society of Dental Science."

IOWA STATE BOARD OF DENTAL EXAMINERS.

The Iowa State Board of Dental Examiners will hold its next meeting for examination at Iowa City, February 6, 7, 8, 9, 1907.

Candidates will be furnished with proper blanks and such other information as is necessary upon application to the Secretary.

All applications must be filed with the Secretary five days prior to the date of examination.

Address all communications to

E. D. BROWER, D. D. S., Sec'y,
Le Mars, Iowa.

INSTITUTE OF DENTAL PEDAGOGICS.

At the fourteenth annual national convention of the Institute of Dental Pedagogics, held at Chicago, the following officers were elected: President, Dr. J. H. Kennerly, of St. Louis; vice-president, Dr. W. Earl Wilmott, of Toronto; secretary-treasurer, Dr. John W. Loesch, of St. Louis. Executive committee—Dr. Don M. Gallie, Chicago; Dr. J. Q. Byram, Indianapolis; Dr. L. P. Bethel, Columbus, and Dr. Ellison Hillyer, New York.

The executive committee selected New Orleans for the fifteenth annual convention, and December 30, 1907, and January 1 and 2, 1908, the dates.

**CONSOLIDATION OF THE FRATERNAL DENTAL SOCIETY
AND THE SOCIETY OF DENTAL SCIENCE
OF ST. LOUIS.**

At a joint meeting of the Fraternal Dental Society and the Society of Dental Science of St. Louis, held December 18, 1906, a consolidation of the two societies was effected, the society to be known in the future as the St. Louis Society of Dental Science.

The officers and committees for the ensuing year are: D. O. M. Le Cron, president; Richard Summa, vice-president; Clarence O. Simpson, secretary; W. E. Brown, treasurer. Executive committee—W. L. Whipple, E. E. Haverstick, Herman F. Cassel. Advisory council—George A. Bowman, A. H. Fuller, Adam Flickinger, William Conrad, Burton Lee Thorpe, Edward H. Angle, E. P. Dameron. Clarence O. Simpson, secretary, 457 Century building, St. Louis.

CARNEGIE DENTAL SCHOOL.

Articles of incorporation have been issued by the Secretary of State at Springfield for a medical and dental school to be established in Chicago under the name of the Andrew Carnegie University. It is expected that it will be opened as a night school late in August. The office is at 185 Dearborn street.

The incorporators are W. J. Bourque, M. D.; J. C. M. Chaffee, M. D.; A. M. Floyd, Harry Porter Hurley, M. D., and W. G. French, M. D.

CHICAGO ODONTOGRAPHIC SOCIETY.

At the annual meeting of the Chicago-Odontographic Society the following officers were elected for the ensuing year: President, F. E. Roach; vice-president, F. W. Gethro; secretary, F. H. Zinn; treasurer, G. W. Dittmar; librarian, J. H. Woolley; board of directors, H. A. Drake; board of censors, F. B. Noyes, J. E. Hinkins, and C. E. Meerhoff.

Yours Fraternaly,

FRANK H. ZINN,
100 State St., Chicago.

RESOLUTIONS ADOPTED BY THE AMERICAN SOCIETY OF
ORTHODONTISTS.

NEW YORK, Dec. 29, 1906.

RESOLVED: That in the opinion of the members of the American Society of Orthodontists, the practice of paying a commission, honorarium, or any sort of fee, in consideration for the reference of a patient is both unwarrantable and unprofessional; and be it

RESOLVED: That the payment of any such commission honorarium, or fee, by any member of this society, shall be sufficient cause for the expulsion of said member, by vote of the society after conviction; and further be it

RESOLVED: That in case of co-operation in the care of a patient between a general practitioner and an Orthodontist, there shall be no division of fees, but each man shall render a separate bill for his personal services.

FREDERICK S. MCKAY,
Secretary.

INSTITUTE OF DENTAL PEDAGOGICS.

The fourteenth annual meeting of the Institute of Dental Pedagogics was held at the Palmer House of Chicago. This has become one of the meetings in dental circles that brings to every one who teaches the true importance of what dental teachers should teach. Of course we oftentimes hear it said by dentists who have been practicing for some years that the teaching in dental colleges is not what it ought to be. They are constantly trying to impress upon the teacher that dental colleges are not doing enough practical teaching; that men are turned out from colleges incompetent, all the time forgetting how incompetent they were and absolutely ignorant many times of their own incompetency. Persons who have never taught in dental colleges and have never taught anywhere are always the severest critics; sometimes, however, their criticisms may be justifiable, but no one yet has offered any remedy.

Gathered at the meeting of the Institute of Dental Pedagogics this year was an interesting lot of teachers seeking their way along the line of teaching. The meeting was presided over by Dr. D. R. Stubblefield of Nashville, Tenn., who made the kind of chairman which everyone would expect of our Nashville friend, who is the finished product of that branch of cultivation of the South. He always lends dignity and sincerity of purpose to the work in hand. The president's address was full of suggestive thought, with some good criticisms on the text book problem for dental college teachers. The subject was discussed by Dr. T. W. Brophy, followed by Dr. J. D. Patterson and Dr. J. B. Wilmott, Dr. Geo. E. Hunt being absent. The president's address was then open for general discussion, which was participated in as freely as time would permit and finally resulted in the appointment of a committee to look after the selection of proper text books for dental colleges.

The next paper read was one by Dr. J. P. Buckley, on "Materia Medica, Pharmacology and Therapeutics." This paper brought out considerable discussion as to how these subjects should be taught in dental colleges, with perhaps some profitable ideas being advanced.

Dr. D. M. Cattell, of Tenn., read a paper on "Dental Technics," which was historical and suggestive. This was discussed by Dr. C. N. Johnson, Dr. Tilleston and Dr. John B. Hart, of New York. Dr. Cattell's paper and the discussion emphasized some very im-

portant features in the teaching of this important subject in the dental college curriculum.

The next paper was on "Prosthodontia," as taught in Tuff's College dental school, read by Dr. Knight, of Boston. Dr. Hoff of Ann Arbor, Mich., opened this discussion, followed by Dr. B. J. Cigrand, of Chicago, and Dr. Snow, of Buffalo.

The next paper was read by Dr. Hermann Prinz of St. Louis, on "Teaching Anæsthesia; the Prevention and Treatment of Emergencies." The discussion on this paper was opened by Dr. Gilmer of Chicago, followed by Dr. A. D. Fredericks of New Orleans. The subject was then open for general discussion and as usual a great many rambling remarks were made that really had but little reference to the subject, as is so common in the case where people discuss subjects of such nature without any preparation or thought of what they are going to say before hand.

Dr. H. T. Smith of Cincinnati read a paper on "A Method of Teaching Orthodontia." The discussion was by Dr. A. E. Webster, of Toronto, Canada, and Dr. C. R. Jackson, of Indianapolis, Ind. This paper and its discussion was very interesting and some very important features of the subject was brought out in a very nice way. The spirit of this subject was not considered in a haphazard way, but in a very systematic and pedagogical manner.

"A Method of Teaching the Principles of Filling Teeth With Porcelain" was discussed by Dr. John Q. Byram, of Indianapolis. The essayist, as every one knows, is an enthusiastic porcelain inlay worker and knows the subject well, and of course he would teach it with the same enthusiasm. Dr. Goslee, of Chicago, opened the discussion on this excellent paper. Dr. Reeves, of Chicago, also participated in the discussion.

The committee on "Dental Nomenclature" made its report through Dr. S. H. Guilford, of Philadelphia, who was the chairman. The discussion of this subject as presented by the committee was very interesting and contained much food for thought.

From the foregoing program, as presented, one is struck with the variety of subjects as well as the interest and enthusiasm of the subjects of all who are teachers. While the pedagogic features were not adhered to as closely as perhaps they would be in the teaching of other branches of learning, at the same time it shows the

earnestness with which the profession of dentistry is trying to put its educational curriculum on something of a scientific basis.

Some schools emphasize the importance of one subject while other schools emphasize other features of the curriculum. This has grown out of the fact that stronger and more forceful efforts are made in one school by a teacher who is extremely interested in his subject, and is trying to get good results in that particular branch he is interested in. But my observations have led me to the conclusion that the teachers who have done the best work in teaching are those who through love of the work combined with some other remunerations will accomplish the most. Personal advertisement sought by many through their connections with other colleges is a mistake that is hard to remedy by a school when it once gets into its faculty the self advertising individual, because they soon cause a feeling of disgust by the profession toward their college and are the means whereby the public loses respect for the profession. Men who seek honor without truly working for it are just as dishonorable as the men who steal gold or any other valuable article.

Such persons as above mentioned have been a great menace to public recognition of the profession of dentistry, but the Pedagogic Society will soon rid our dental college faculties of such individuals and will bring to light the true meritorious workers. So as the fourteenth annual meeting of the Institute of Dental Pedagogics passes into history and the future program committee arrange their essayists for the next session, let them try to do so with a view that the essayists and the discussions of the various subjects be only from those who are truly college teachers, and the subjects be presented by the essayists and the discussions be along pedagogical lines of treating various subjects.

MISCELLANEOUS

THE APICAL FORAMEN.

The root of a permanent tooth is not fully formed, and the apical foramen smaller than the root-canal until the third or fourth year after the eruption of the tooth.—*Dominion Dental Journal*.

WHEN IN DOUBT.

When in doubt don't extract. When in doubt don't make a bridge. When in doubt don't put on a crown. But when in doubt devitalize the pulp.—*Dominion Dental Journal*.

SENSITIVE DENTIN.

Jarring the tooth with an automatic mallet, having a blunt-point planer in the cavity, aids materially in inducing the penetration of fluids into the dentin.—*N. C. Leonard, Dental Headlight*.

HEMORRHAGE AND PRESSURE ANESTHESIA IN PULP DEVITALIZATION.

When a pulp is devitalized by pressure anæsthesia the hemorrhage should not be checked until it ceases entirely or inflammation of the periapical tissues will result.—*I. W. Beach, Dental Cosmos*.

TREATMENT OF VERY SORE TEETH.

I have had great help from the use of a string tied around the tooth, instructing the patient to draw on it until it is real tight. The effect will be a revelation.—*F. Milton Smith, International Dental Journal*.

ETCHING PORCELAIN INLAYS.

Hydrofluoric acid makes a smooth etch; *white acid* makes a frosted etch, to which the cement will tightly adhere. It is prepared by making a saturated solution of ammonium carbonate in hydrofluoric acid, using a lead dish; evaporate to one-half its bulk; add hydrofluoric acid up to original bulk, and evaporate again to one-half. Keep it in a gutta-percha bottle.—*Joseph Head, Dental Cosmos*.

PULP EXTIRPATION.

Where immediate extirpation is intended, if a pellet of cotton is placed over the rubber in the cavity a much better pressure can be obtained, as the cotton prevents the rubber from spreading so much under the instrument.—*W. A. Brownlee, Dental Brief.*

OBTUNDING SENSITIVE DENTIN: A SUGGESTION.

Chlorid of sodium being used in the animal economy to promote endosmosis, why would it not, in solution with cocain; aid in conducting the latter through the dentin?—*N. C. Leonard, Dental Headlight.*

CARE OF CHILDREN'S TEETH.

For the health of the individual, for the comfort of the family, for the welfare of the State, treat the children's teeth early and imbue them with the belief that *clean teeth do not decay*.—*George Cunningham, British Dental Journal.*

PULP EXTIRPATION WITH COCAIN.

Dissolve cocain crystals in adrenalin and there will be no hemorrhage. Wrap a few fibres of cotton on a broach and dip in trichloroacetic acid and insert to the bottom of the canal, cauterizing the ends of the nerve fibres. The canal is then ready for immediate filling.—*A. Enbank, Dental Headlight.*

PAIN AFTER TOOTH EXTRACTION.

The extraction of an abscessed tooth is generally followed by great pain. I have found lysol to be the ideal remedy in such conditions, placing it undiluted in the socket. It will relieve the pain immediately, help to check the hemorrhage and establish antiseptic conditions in the socket.—*G. B. Winter, Dental Era.*

FOR SORE LIPS.

Collodion is very useful as an application to sore lips before beginning to operate; it takes out the soreness, protects the lips, which heal rapidly after the application. Applied to wounds on the hands, it reduces the danger of infection; washing will not remove it.—*W. J. Hemphill, Dental Digest.*

THE MAN WITH A SOUL.

BY R. C. LOGAN, D. D. S., DES MOINES, IOWA.

There's a place for the man who can dig in the street;
There's a place for the man who will barter and cheat;
There's a place for the man who has wallet and roll—
But where is the place for the man with a soul?

There are times when it seems that his place is not here
On this gyrating, heart-breaking, turbulent sphere,
That there's market for avarice, hatred and greed,
But the man with a soul has a poor chance indeed.

The young man starts out with his ideals in mind.
And the world calls him green, until soon he shall find
That a man with a soul has a millstone of weight
To hinder his progress till he throws off its freight.

A man with a soul! Oh, what a pitiful fate,
His prospects so bright, but alas! sees too late
That a man who's so foolish as to own such a thing
Gains naught in this world but its laugh or its sting.

Is God in His throne looking down o'er us all,
Whose e'erseeing eye notes the sparrows that fall,
When the evil man sits with a crown on his head
And the righteous man's children are crying for bread?

Oh, some one instruct me, which way shall I turn,
Shall I keep to my ideal, or shall I, too, learn
To barter this soul for the glittering gold
That blesses, yet curses?—My story is told.

PERSONAL AND GENERAL

Dr. H. L. Agard committed suicide at East Aurora, N. Y., Dec. 20.

Shaw-Ervin.—Dr. W. M. Shaw of Taylorville, Ill., and Miss Luetta Ervin of St. Louis were married Jan. 1.

Bankrupt.—Dr. B. F. Wolfe, a dentist of Fremont, Ind., filed a petition in bankruptcy; assets, \$340; liabilities, \$350.

Brown-Wing.—Dr. A. B. Patterson of Joliet, Ill., and Mrs. Jessie Leona Wing of Buffalo, N. Y., were married Dec. 25.

Granger-Deal.—Dr. F. S. Granger of Plainwell, Mich., and Miss Arlie Deal of Williams were married at Plainwell, Jan. 8.

Fire.—Dr. J. B. Stewart of Hamilton, Ohio, suffered complete loss of his dental office Dec. 22. Loss, \$500; fully covered by insurance.

Owsley-Dallam.—Dr. Harvey Owsley of St. Louis and Miss Elizabeth W. Dallam of Belleville, Ill., were married in the latter place Jan. 2.

Fire.—Dr. Hartman, a dentist at Perry, Iowa, suffered a considerable loss by fire which destroyed the block in which his dental office was located.

Dr. Haskell at Dallas.—Dr. L. P. Haskell of Chicago is at Dallas, Tex., where he will give a two weeks' course of lectures in the State Dental College.

Dr. Frederick L. Herman, a young dentist of Flint, Mich., died Jan. 2 of rheumatism. He was a graduate of the dental department of the University of Michigan.

New Building for Minnesota.—The regents of the State University of Minnesota have asked for an appropriation of \$100,000 for colleges of dentistry and pharmacy.

Died from Shock of Teeth Extraction.—George Michaels, aged 51, a cigarmaker in Oneida, N. Y., died from shock due to extraction of eleven teeth, according to the Buffalo, N. Y., Courier.

Dr. W. R. Hall, a dentist of Philadelphia, died Dec. 14, ten minutes after receiving a paralytic stroke. He was 84 years of age. Dr. Hall retired from the practice of dentistry ten years ago.

Dr. D. W. Smith, a prominent dentist at Wichita, Kas., died in Trenton, N. J., while visiting at the home of his daughter. He was 74 years of age and was the second dentist to locate in Wichita.

Dr. Halvord Lee, a dentist at Chippewa Falls, Wis., died Jan. 9 of pneumonia. He was 47 years of age and was born in Norway. Dr. Lee was a graduate of the Chicago College of Dental Surgery.

Dr. J. W. Wyckoff, a dentist at Chagrin Falls, Ohio, dropped dead in the street of heart failure Jan. 15. Dr. Wyckoff had lived at Chagrin Falls for sixty years and had practiced dentistry twenty years.

Tombberman-Maier.—Dr. D. Lacey Tombberman of Orange, N. J., and Miss Emma Wilhelmina Maier of Newark, N. J., have just announced their marriage, which took place six months ago in New York City.

Dr. James O. Fowler, a dentist at Pittsburg, died November 8th of tuberculosis. He was the father of Dr. W. S. Fowler, also a dentist, who eloped with a daughter of Charles Lockhart, a millionaire Standard Oil magnate.

Dr. James L. Clapp, 69 years old, a resident of Chicago since 1863, died in Los Angeles, Cal., Dec. 21. He located in Chicago in the practice of dentistry in 1863, continuing his practice until ten years ago, when he retired.

Luzerne and Lackawanna Dental Society held their tenth annual meeting and banquet at Wilkesbarre, Pa., Jan. 16. Dr. Edson M. Green of Scranton presided. Dr. W. S. Kelly was elected president for the ensuing year.

Fraternity Banquet.—The Psi Omega Dental Fraternity gave a banquet November 2d. About forty members were present. Dr. H. Banzaf, dean of the Milwaukee Dental College, and Dr. Tellem Jackson were the principal speakers.

Dr. James L. Simonds, a dentist in Dorchester, Mass., died November 7th after a lingering illness. He was 82 years of age and leaves a large fortune, which it is believed will found a home for female orphans as that is the purport of the will.

Dr. E. C. Chase, a St. Louis dentist, died at his summer home in Hillsboro, Ill., October 15th. He had practiced his profession in St. Louis for twenty-five years and was a graduate of the Missouri Dental College in 1870. He had also practiced in Iowa City.

Dr. J. B. Breeding, a dentist at San Antonio, Texas, died of cerebrospinal meningitis. The doctor was formerly located at Bowling Green, Ky., but was associated with his father in the practice of dentistry at San Antonio at the time of his death.

Southern Illinois Dental Society held its annual meeting at Centralia, and the following officers were elected for the ensuing year: President, R. H. Hood, Sparta; vice-president, J. K. Conroy, Belleville; secretary, H. K. Barnett, Alton; treasurer, A. F. Strange, Litchfield.

Will Practice in India.—Dr. C. V. Smith of Hillsdale, Mich., has signed a contract with a firm of American dentists in Calcutta, India, and is now on his way to that city. He is a graduate of the University of Michigan and has been practicing in Sheperd, Mich.

Will-Grundy County Dental Society held its quarterly meeting and election of officers and elected the following: Dr. Ralph Green, Braidwood, president; Dr. H. F. Lotz, Joliet, vice-president; Dr. G. P. Saville, Joliet, secretary; Dr. Fred Swartz, Morris, treasurer.

California State Board has just made its twenty-second annual report. At a recent meeting the board elected the following officers: Dr. George A. White, Santa Barbara, president; Dr. C. A. Herrick, Jackson, secretary; Dr. E. G. Howard, Los Angeles, treasurer.

Samuel Woodward Cooke, one of the oldest dentists in Worcester, died suddenly of heart failure October 27th. Dr. Cooke was 81 years of age and had been a member of the State Legislature. He began the study of dentistry in 1855 and had practiced dentistry since that time.

Rock Island County Dental Society held a successful meeting in the city of Rock Island. The following were elected as officers for the ensuing year: President, H. D. Trent, Rock Island; vice-president, M. M. Everett, Atkinson; secretary, W. H. Carl, Rock Island; treasurer, R. B. Hinmann, Moline.

Northern Illinois Dental Society held its annual meeting at Aurora and elected the following officers for the ensuing year: President, C. L. Snyder, Freeport; vice-president, A. S. Cheesman, Joliet; secretary, A. M. Harrison, Rockford; treasurer, H. G. Logan, Aurora; supervisor of clinic, J. E. Harned, Rockford; chairman program committee, I. B. Carelus, Sterling; chairman of local committee, B. Kerr, Rockford. The next meeting will be held at Rockford.

Robberies.—D. J. Jensen, Cedar Falls, Iowa, loss \$40; Dr. S. C. Honeywell, Grand Island, Neb., loss \$124; Dr. C. G. S. Nichols, Leavenworth, Kas., loss \$350; Dr. B. E. Nelson, Leavenworth, Kas., loss \$12; Dr. I. Jones, Mobile, Ala., loss \$25.

Burglaries.—Drs. W. H. Hisey, Toledo, Ohio; loss, \$175. J. I. Byrne, St. Joseph, Mo.; loss, \$20. H. S. Murphy and A. E. Littlechild, at Fremont, Neb.; loss, \$100. J. F. Moon, Paterson, N. J.; loss, \$45. J. F. Miller, Paterson, N. J.; loss, \$100. R. E. Haggerty, at Dubuque, Iowa; loss, \$40. John C. Schuler, El Paso, Texas; loss, \$100.

Removals.—Dr. F. E. Clinite, from Rochelle, Ill., to Redfield, S. D.; Dr. G. Shimon, from Fort Gibson, I. T., to Muskogee, I. T.; Dr. E. J. Dykeman, from Wiltshire, Ohio, to Richmond, Ind.; Dr. S. A. Arnold, from Geneva, Ill., to Chicago, Ill.; Dr. L. E. Stutenroth, from Clear Lake, S. D., to Redfield, S. D.; Dr. A. H. Cox, from St. Peter, Minn., to Faribault, Minn.; Dr. H. J. Smith, from Genessee, Idaho, to Spokane, Wash.; Dr. C. B. Frank, from Niagara Falls, N. Y., to New Cheyenne, Wyo.; Dr. Edward Parsell, from Jerseyville, Ill., to Springfield, Ill.; Dr. H. E. Coffman, from Cincinnati, Ohio, to Salem, Ind.; Dr. H. H. Kreutzman, from Hillsboro to Laval, Wis.

Knox County Dental Society held its regular meeting in Galesburg, October 13th. The principal matter under discussion was reciprocity between States regarding dental licenses and resolutions will be presented to the State meeting, and the following have been appointed a committee for that purpose: Dr. W. J. Adams, Knoxville; Dr. D. J. Griswold, Knoxville, and Dr. A. C. Parr, Abingdon.

Swallowed Teeth.—While eating his breakfast, Hugo Herfurth Jr., a car builder of Alexandria, swallowed three artificial teeth and the plate to which they were attached. They lodged in the young man's throat and after efforts had been made to dislodge them, he was taken to a Washington hospital, where it was found necessary to make an incision in his throat before they could be removed.

DENTAL PATENTS

837,423. Dental Handpiece. Alson C. Sargent, Des Moines, Iowa. Filed July 13, 1903. Serial No. 165,295. See Fig. 1. Claim.—1. In a dental handpiece, the combination of a tool-holding spindle provided with an axial bore to receive the shank of a tool, and with a plurality of mortises extending through the sides of the spindle into said bore, chuck-jaws loosely seated in said mortises each having a substantially straight inner face and a forwardly and outwardly inclined outer face protruding radially beyond the spindle, the ends of said mortises and of said chuck-jaws being provided with interfitting shoulders, a check sleeve mounted to slide upon the spindle and having its forward end telescoping upon and engaging the outwardly and forwardly inclined surfaces of the chuck-jaws, an external slide upon the handpiece, and operative connections between said slide and said chuck-sleeve.

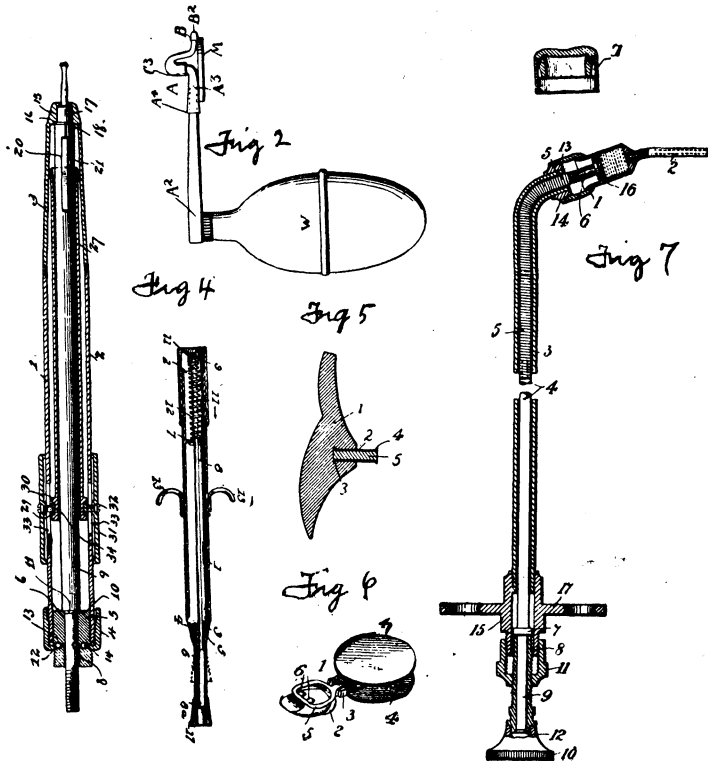
838,648. Combination Hand Mouth-Mirror and Chip-Blower and Flushing and Spraying Device. Oliver T. Robertson, Milford, Ohio. Filed November 19, 1904. Serial No. 233,522. See Fig. 2. Claim.—1. In a dental instrument, the combination of a tube to convey a fluid to a desired point, and a hand mouth-mirror connected thereto, substantially as and for the purposes specified.

838,849. Porcelain and Metallic Crown.—Charles A. Davis, Pasadena, Cal. Filed November 11, 1904. Serial No. 232,335. See Fig. 3. Claim.—1. In combination with the root of a tooth, a band fitted thereto, means for securing the band to the root, a crown having an annular groove in the circumference thereof, and a metallic ring seated in said groove and adapted to be soldered to the inner circumference of said band, as set forth.

829,119. Dental Plugger.—Frank X. Mellen, Triadelphia, Ohio, as-

signor one-third to Ira Baringer, Crooksville, Ohio. Filed March 12, 1906. Serial No. 305,515. See Fig. 4. Claim.—1. A dental plugger comprising a barrel, a spring-actuated plunger, a tube in which said plunger is movable and a cup mounted on said tube to extend beyond the same to catch the material falling from the tube.

838,415. Artificial Tooth.—John H. Jackson, Boston, Mass. Filed October 26, 1905. Serial No. 284,412. See Fig. 5. Claim.—In an artificial tooth, a pin consisting of a shell of platina filled with metal having a lower fusing-point than that of the porcelain; the metal being fused within said shell after the tooth has been baked.



838,027. Tool for Handling Artificial Teeth.—Frederick L. Hunt, Asheville, N. C. Filed October 18, 1906. Serial No. 339,544. See Fig. 6. Claim.—A tool of the character described, comprising pivoted-together handled jaw members, one having a ball-like forward end terminal, and the other jaw having its forward end terminal extending to a point opposite the middle of said ball-like terminal, said jaw members also having their handled portions provided with finger-engaged disk or plate portions.

833,044. Dental Instrument.—Thomas Goodhugh, Sutton, England, assignor to Claudius Ash Sons & Co., 1905, Limited, London, England. Filed March 13, 1906. Serial No. 305,742. See Fig. 8. Claim.—1. In an instrument for filling teeth with stopping medium and in combination a receptacle for the stopping medium, a rotatable nozzle in connection therewith, a piston adapted to force the contents of the receptacle out through the nozzle, a shaft having a flexible end carrying said piston, and means for imparting an endwise movement to said shaft to operate the piston.

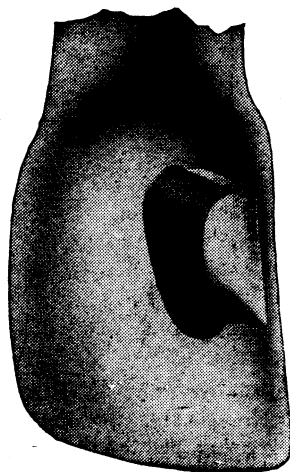
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